
Refined Metals Corporation

VIA EMAIL & FEDERAL EXPRESS

March 30, 2017

United States Environmental Protection
Agency Region V
RCRA Enforcement Branch
77 W. Jackson St., HRE-8J
Chicago, IL 60604-3590
Attn: Refined Metals Corp. – Project Coordinator

Thomas Linson, Branch Chief
Office of Solid & Hazardous Waste Management Branch
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46204
Attn: Refined Metals Corp.

United States Department of Justice
Environmental Enforcement Section
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044
Re U.S. v. Refined Metals
DOJ Case 90-11-2-469

Re: Notice of Intent to Sell Property
Refined Metals Corporation
3700 S. Arlington Avenue
Beech Grove, Indiana
Civil Action No. IP902077C

Dear Sirs,

Pursuant to Paragraph 26 of the Consent Decree for the subject civil action, this letter provides the EPA, IDEM and USDOJ notification that Refined Metals Corporation (Refined) intends to sell the subject property. As specified in the Consent Decree, Refined provided the buyer the Consent Decree on September 28, 2016 and has been advised by Refined as to its obligations under the Consent Decree.

257 West Mallory Avenue • Memphis, Tennessee 38109
3700 S. Arlington Avenue • Beech Grove, Indiana 46203
Mailing Address: 3000 Montrose Avenue • Reading, PA 19605

USEPA Region V
Thomas Linson, Branch Chief
USDOJ
March 30, 2017

Page 2 of 2

Paragraph 26 of the Consent Decree specifies that this notice be provided to the EPA, IDEM and the USDOJ 60 days prior to the sale of the property. Refined and the buyer would like to close on the sale sooner than 60 days and requests EPA, IDEM and the USDOJ waive the 60 day requirement. I can be reached at (610) 921-4054 or at matt.love@exide.com.

Please contact me and let me know if your agency has any objection to waiving the 60 day notification period.

Sincerely,

EXIDE TECHNOLOGIES



Matthew A. Love
Director, Environmental Remediation

257 West Mallory Avenue • Memphis, Tennessee 38109
3700 S. Arlington Avenue • Beech Grove, Indiana 46203
Mailing Address: 3000 Montrose Avenue • Reading, PA 19605

2017 MAR 20 PM 2:27

Environmental Restrictive Covenant

KATHERINE SWEENEY BELL
MARION COUNTY RECORDER

THIS ENVIRONMENTAL RESTRICTIVE COVENANT ("Covenant") is made this 3rd day of March, 2017, by Refined Metals Corporation, 13000 Deerfield Parkway, Milton, Georgia 30004 (together with all successors and assignees, collectively "Owner").

WHEREAS: Owner is the fee owner of certain real estate in the County of Marion, Indiana, which is located at 3700 South Arlington Avenue, Beech Grove, Indiana 46203 and more particularly described in the attached Exhibit "A" ("Real Estate"), which is hereby incorporated and made a part hereof. This Real Estate was acquired by deed on November 21, 1979, and recorded on November 27, 1979, as Deed Record 79-91445, in the Office of the Recorder of Marion County, Indiana. The Real Estate consists of approximately 23.912 acres and has also been identified by the county as parcel identification number 49-10-27-107-002.000-302. The Real Estate, to which the restrictions in this Covenant apply, is depicted on a map attached hereto as Exhibit "B".

WHEREAS: RCRA Closure and Corrective Action was conducted in accordance with IC 13-22, other applicable Indiana law, and in satisfaction of the Consent Decree resolving the civil action in United States of America v. Refined Metals Corporation, Civil Action No. IP902077C (Barker, J.)(S.D. Ind.) as a result of a release of hazardous waste and/or hazardous constituents relating to the Refined Metals Corporation facility located in Beech Grove, Indiana (EPA ID No. IND 000 718 130).

WHEREAS: The RCRA closure and corrective action activities conducted, as approved by the Indiana Department of Environmental Management ("Department") and the United States Environmental Protection Agency ("USEPA"), provide that contaminants of concern (COCs) will remain in the soil and groundwater of the Real Estate. The Department and the USEPA have determined that the COCs will not pose an unacceptable risk to human health or the environment at the remaining concentrations, provided that the land use restrictions contained herein are implemented and engineering controls maintained. These COCs are listed in Exhibit C, which is attached hereto and incorporated herein.

WHEREAS: Environmental investigation reports and other related documents are hereby incorporated by reference and may be examined at the offices of the Department, which is located in the Indiana Government Center North building at 100 N. Senate Avenue, Indianapolis, Indiana. The documents may also be viewed electronically in the Department's Virtual File Cabinet by accessing the Department's Web Site (currently www.in.gov/idem/). Environmental investigation reports and other related documents may also be examined at the offices of the USEPA, which is located at 77 West Jackson Street, Chicago, Illinois.

NOW THEREFORE, Refined Metals Corporation subjects the Real Estate to the following restrictions and provisions, which shall be binding on the current Owner and all future Owners:



1456

I. RESTRICTIONS

I. Restrictions. The Owner:

- (a) Shall not use or allow the use of the Real Estate for residential purposes, including, but not limited to, daily child care facilities or educational facilities for children (e.g., daycare centers or K-12 schools).
- (b) Shall not use or allow the use or extraction of groundwater at the Real Estate for any purpose, including, but not limited to: human or animal consumption, gardening, industrial processes, or agriculture, except that groundwater may be extracted in conjunction with environmental investigation and/or remediation activities.
- (c) Shall not use the Real Estate for any agricultural use.
- (d) Shall restore soil disturbed as a result of excavation and construction activities in such a manner that the remaining contaminant concentrations do not present a threat to human health or the environment. This determination shall be made using the Department's Remediation Closure Guide ("RCG"). Upon the Department's and/or the USEPA's request, the Owner shall provide the Department and the USEPA written evidence (including sampling data) showing the excavated and restored area, and any other area affected by the excavation, does not represent such a threat. Contaminated soils that are excavated or disposed must be managed in accordance with all applicable federal and state laws.
- (e) Shall neither engage in nor allow excavation of soil on the Real Estate (excluding the Containment Cell shown on Exhibit B), unless soil disturbance obligations listed in the preceding paragraph are followed. In addition, the Owner shall provide written notice to the Department and the USEPA, in accordance with paragraph 14 below, at least 14 calendar days before the start of soil disturbance activities. The owner, upon the Department's and/or USEPA's request, shall provide the Department and the USEPA evidence showing the excavated and restored area does not represent a threat to human health or the environment.
- (f) Shall prohibit any activity at the Real Estate that may interfere with the groundwater monitoring or well network.
- (g) Shall maintain the integrity of the Containment Cell cap, which is depicted on Exhibit "D" via legal survey; this area serves as an engineered barrier to prevent direct contact with the underlying soils and must not be excavated, removed, disturbed, demolished, or allowed to fall into disrepair.

II. GENERAL PROVISIONS

2. Restrictions to Run with the Land. The restrictions and other requirements described in this Covenant shall run with the land and be binding upon, and inure to the benefit of the Owner of the Real Estate and the Owner's successors, assignees, heirs and lessees and their authorized agents, employees, contractors, representatives, agents, lessees, licensees, invitees, guests, or persons acting under their direction or control (hereinafter "Related Parties") and shall continue as a servitude running in perpetuity with the Real Estate. No transfer, mortgage, lease, license, easement, or other conveyance of any interest in or right to occupancy in all or any part of the Real Estate by any person shall affect the restrictions set forth herein. This Covenant is imposed upon the entire Real Estate unless expressly stated as applicable only to a specific portion thereof.
3. Binding upon Future Owners. By taking title to an interest in or occupancy of the Real Estate, any subsequent Owner or Related Party agrees to comply with all of the restrictions set forth in paragraph 1 above and with all other terms of this Covenant.
4. Access for Department. The Owner shall grant to the Department and USEPA and their designated representatives the right to enter upon the Real Estate at reasonable times for the purpose of monitoring compliance with this Covenant and ensuring its protectiveness; this right includes the right to take samples and inspect records.
5. Written Notice of the Presence of Contamination. Owner agrees to include in any instrument conveying any interest in any portion of the Real Estate, including but not limited to deeds, leases and subleases (excluding mortgages, liens, similar financing interests, and other non-possessory encumbrances), the following notice provision (with blanks to be filled in):

NOTICE: THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL RESTRICTIVE COVENANT, DATED _____ 2017, RECORDED IN THE OFFICE OF THE RECORDER OF _____ COUNTY ON _____, 2017, INSTRUMENT NUMBER (or other identifying reference) _____ IN FAVOR OF AND ENFORCEABLE BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.

6. Notice to Department and USEPA of the Conveyance of Property. Owner agrees to provide notice to the Department and the USEPA of any conveyance (voluntary or involuntary) of any ownership interest in the Real Estate (excluding mortgages, liens, similar financing interests, and other non-possessory encumbrances). Owner must provide the Department and USEPA with the notice within thirty (30) days of the conveyance and: (a) include a certified copy of the instrument conveying any interest in any portion of the Real Estate, and (b) if it has been

recorded, its recording reference, and (c) the name and business address of the transferee.

7. Indiana Law. This Covenant shall be governed by, and shall be construed and enforced according to, the laws of the State of Indiana.

III. ENFORCEMENT

8. Enforcement. Pursuant to IC 13-14-2-6 and other applicable law, the Department and USEPA may proceed in court by appropriate action to enforce this Covenant. Damages alone are insufficient to compensate IDEM and USEPA if any owner of the Real Estate or its Related Parties breach this Covenant or otherwise default hereunder. As a result, if any owner of the Real Estate, or any owner's Related Parties, breach this Covenant or otherwise default hereunder, IDEM and USEPA shall have the right to request specific performance and/or immediate injunctive relief to enforce this Covenant in addition to any other remedies it may have at law or at equity. Owner agrees that the provisions of this Covenant are enforceable and agrees not to challenge the provisions or the appropriate court's jurisdiction.

IV. TERM, MODIFICATION, AND TERMINATION

9. Term. The restrictions shall apply until the Department and USEPA determine that the contaminants of concern no longer present an unacceptable risk to the public health, safety, or welfare, or to the environment.
10. Modification and Termination. This Covenant shall not be amended, modified, or terminated without the Department's and USEPA's prior written approval. Within thirty (30) days of executing an amendment, modification, or termination of the Covenant, Owner shall record such amendment, modification, or termination with the Office of the Recorder of Marion County and within thirty (30) days after recording, provide a true copy of the recorded amendment, modification, or termination to the Department and the USEPA.

V. MISCELLANEOUS

11. Waiver. No failure on the part of the Department or the USEPA at any time to require performance by any person of any term of this Covenant shall be taken or held to be a waiver of such term or in any way affect the Department's and USEPA's right to enforce such term, and no waiver on the part of the Department and the USEPA of any term hereof shall be taken or held to be a waiver of any other term hereof or the breach thereof.
12. Conflict of and Compliance with Laws. If any provision of this Covenant is also the subject of any law or regulation established by any federal, state, or local government, the strictest standard or requirement shall apply. Compliance with

this Covenant does not relieve the Owner of its obligation to comply with any other applicable laws.

13. Change in Law, Policy or Regulation. In no event shall this Covenant be rendered unenforceable if Indiana's laws, regulations, RCG guidelines, or remediation policies (including those concerning environmental restrictive covenants, or institutional or engineering controls) change as to form or content. All statutory references include any successor provisions.
14. Notices. Any notice, demand, request, consent, approval or communication that either party desires or is required to give to the other pursuant to this Covenant shall be in writing and shall either be served personally or sent by first class mail, postage prepaid, addressed as follows:

To Owner:

Refined Metals Corporation
13000 Deerfield Parkway
Milton, GA 30004
Attn: VP Environmental, Health & Safety

To Department:

IDEM, Office of Land Quality
100 N. Senate Avenue
IGCN 1101
Indianapolis, IN 46204-2251
Attn: Section Chief, Hazardous Waste Permit Program

To USEPA:

USEPA, Land and Chemicals Division
77 West Jackson Boulevard
Chicago, IL 60604-3590

An Owner may change its address or the individual to whose attention a notice is to be sent by giving written notice via certified mail.

15. Severability. If any portion of this Covenant, or other term set forth herein, is determined by a court of competent jurisdiction to be invalid for any reason, the surviving portions or terms of this Covenant shall remain in full force and effect, as if such portion found invalid had not been included herein.
16. Authority to Execute and Record. The undersigned person executing this Covenant represents that he or she is the current fee Owner of the Real Estate or is the authorized representative of the Owner, and further represents and certifies that he or she is duly authorized and fully empowered to execute and record, or have recorded, this Covenant.

Owner hereby attests to the accuracy of the statements in this document and all attachments.

IN WITNESS WHEREOF, Refined Metals Corporation, the said Owner of the Real Estate described above has caused this Environmental Restrictive Covenant to be executed on this 3rd day of March, 2017.

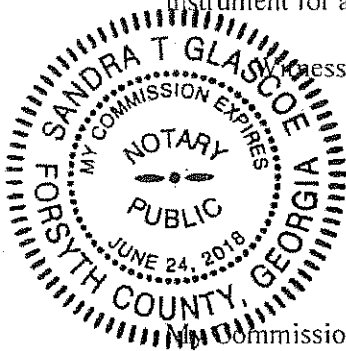
BDJ. Klt

[Owner's Signature]

STATE OF Georgia)
COUNTY OF Fulton) SS:

Before me, the undersigned, a Notary Public in and for said County and State, personally appeared Brad Katter, the Secretary of the Owner, Refined Metals Corp., who acknowledged the execution of the foregoing instrument for and on behalf of said entity.

I witness my hand and Notarial Seal this 3 day of March, 2017.



Sandra T Glascoe
Sandra T. Glascoe, Notary Public

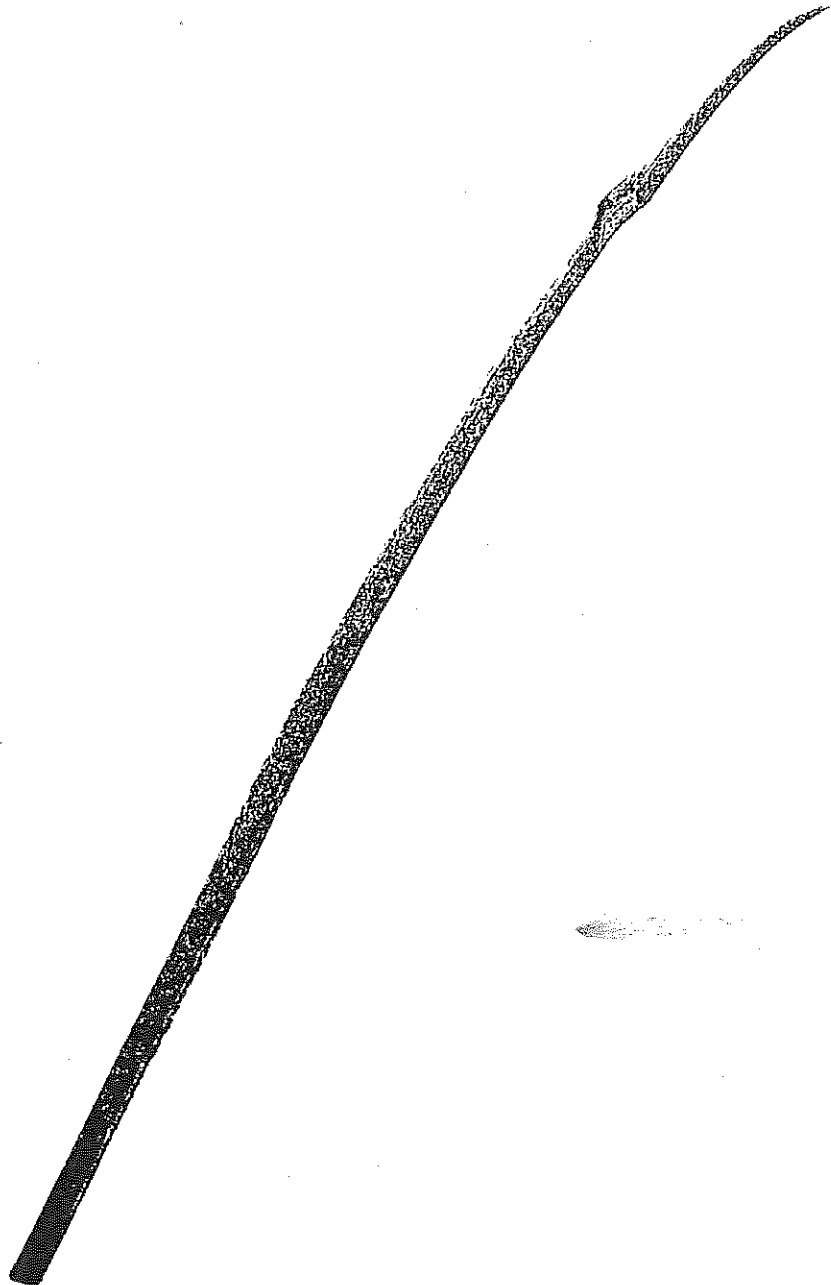
Residing in Forsyth County, GA
My Commission Expires: June 24, 2018

This instrument prepared by: Matthew Love, 3000 Montrose Avenue, Reading, PA 19605

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each Social Security number in this document, unless required by law: Matthew Love, 3000 Montrose Avenue, Reading, PA 19605

EXHIBIT A

LEGAL DESCRIPTION OF REAL ESTATE



79 91445

DULY ENTERED
FOR RECORD

Nov 27 1979 56064

COUNTY RECORDER

CORPORATE WARRANTY DEED*Henry L. Sweeney*

THIS INDENTURE WITNESSETH, That NL INDUSTRIES, INC., formerly known as National Lead Company, ("Grantor"), a corporation organized and existing under the laws of the State of New Jersey, CONVEYS AND WARRANTS to REFINED METALS CORPORATION, a corporation organized and existing under the laws of the State of Delaware, having an office at 5 Penn Center Plaza, Philadelphia, Pennsylvania, for the sum of One Dollar (\$1.00) and other valuable consideration, the receipt of which is hereby acknowledged, the following described real estate in Marion County, in the State of Indiana:

Part of the Northeast Quarter and part of the Southeast Quarter of Section 27, Township 15 North, Range 4 East, Marion County, Indiana, being more particularly described as follows:

Commencing at the Southeast corner of said Northeast Quarter; thence North 0° 04' 08" West, on and along the East line of said Northeast Quarter, 27.83 feet measured (27.8 feet deed) to the Southwesterly line of the original 80 foot right of way line of the C. C. C. & St. L. R. R.; thence North 49° 57' 00" West, on and along said right of way line, 19.61 feet measured (19.60 feet deed) to the point of beginning of this description; thence South 0° 04' 08" East, parallel to and 15.00 feet from said East line, 40.45 feet; thence South 0° 00' 00" West, parallel to and 15.00 feet from the East line of said Southeast Quarter, 1527.23 feet to the Northeasterly line of Big Four Road; thence North 49° 57' 00" West, on and along said Northeasterly line, 1150.00 feet; thence North 40° 03' 00" East 80.00 feet; thence North 49° 57' 00" West, parallel to said Northeasterly line, 280.24 feet; thence North 40° 02' 50" East measured (North 40° 03' East deed) 1120.00 feet to said Southwesterly railroad right of way line; thence South 49° 57' 00" East, on and along said right of way line, 421.53 feet to the point of beginning.

SUBJECT TO:

- a. Taxes for the year 1979 and subsequent years.
- b. Zoning, building and building line restrictions, regulations and ordinances of the city, county, or town in which the Premises is situated.



Thy
Katherine Sweeney
RECORDER OR DEPUTY
11-17-16
DATE

79 91445



OFFICIAL CERT
TRUE AND CO
Katherine Sweeney
RECORDER OF
11-17-16
DATE

*5 Penn Center Plaza
Philadelphia, Pa*

RECEIVED
MAR 27 12 21 PM '79

c. Such state of facts shown on that certain survey certified August 29, 1979 by Frank M. Hahn & Associates, Inc., Surveyors, including easement for existing railroad spur; and easement for public utilities as evidenced by the water and overhead power lines along the east portion of the Premises; and any subsequent changes thereto.

d. Right of way grant in favor of Marion County, Indiana recorded April 27, 1967 as Instrument #67-17171, and by grant recorded June 23, 1967, as Instrument # 67-27556.

e. Railroad side track agreements affecting the Premises.

f. License Agreement, dated October 2, 1967 between National Lead Company and The New York Central Railroad Company.

g. Letter Agreement dated March 12, 1971 between Penn Central Transportation Company and NL Industries, Inc.

h. Lease dated April 1, 1967 between New York Central Railroad Company and NL Industries, Inc.

i. Any easements, reservations, covenants, agreements and restrictions of record.

The undersigned persons executing this deed on behalf of Grantor represent and certify that they are duly elected officers of Grantor and have been duly empowered, by proper resolution of the Board of Directors of Grantor, to execute and deliver this deed; that Grantor has full corporate capacity to convey the real estate described herein; and that all necessary corporate action for the making of such conveyance has been taken and done.

Grantor certifies under oath that no Indiana Gross Income Tax is due or payable in respect to the transfer made by this Deed.

IN WITNESS WHEREOF, Grantor has caused this deed to be executed this 21st day of November, 1979.

ATTEST:

NL INDUSTRIES, INC.

By Edmund J. Calvin
EDWARD J. CALVIN
Vice President

By John T. Rapperty
JOHN T. RAPPERTY
Assistant Secretary



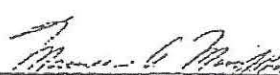
OFFICIAL CERTIFIED COPY
TRUE AND COMPLETE
Katherine Sweeney Bell
RECORDER OR DEPUTY
11-17-10 79
DATE

91445

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

Before me, a Notary Public in and for said County and State, personally appeared EDWARD J. CALVIN, Vice President and JOHN T. RUFFERTY, Assistant Secretary, respectively, of WL INDUSTRIES, INC., who acknowledged execution of the foregoing Deed for and on behalf of said grantor, and who, having been duly sworn, stated that the representations therein contained are true, including the statement with respect to the exemption from payment of the Indiana Gross Income Tax.

Witness my hand and Notarial Seal this 21st day of November, 1979.


Notary Public

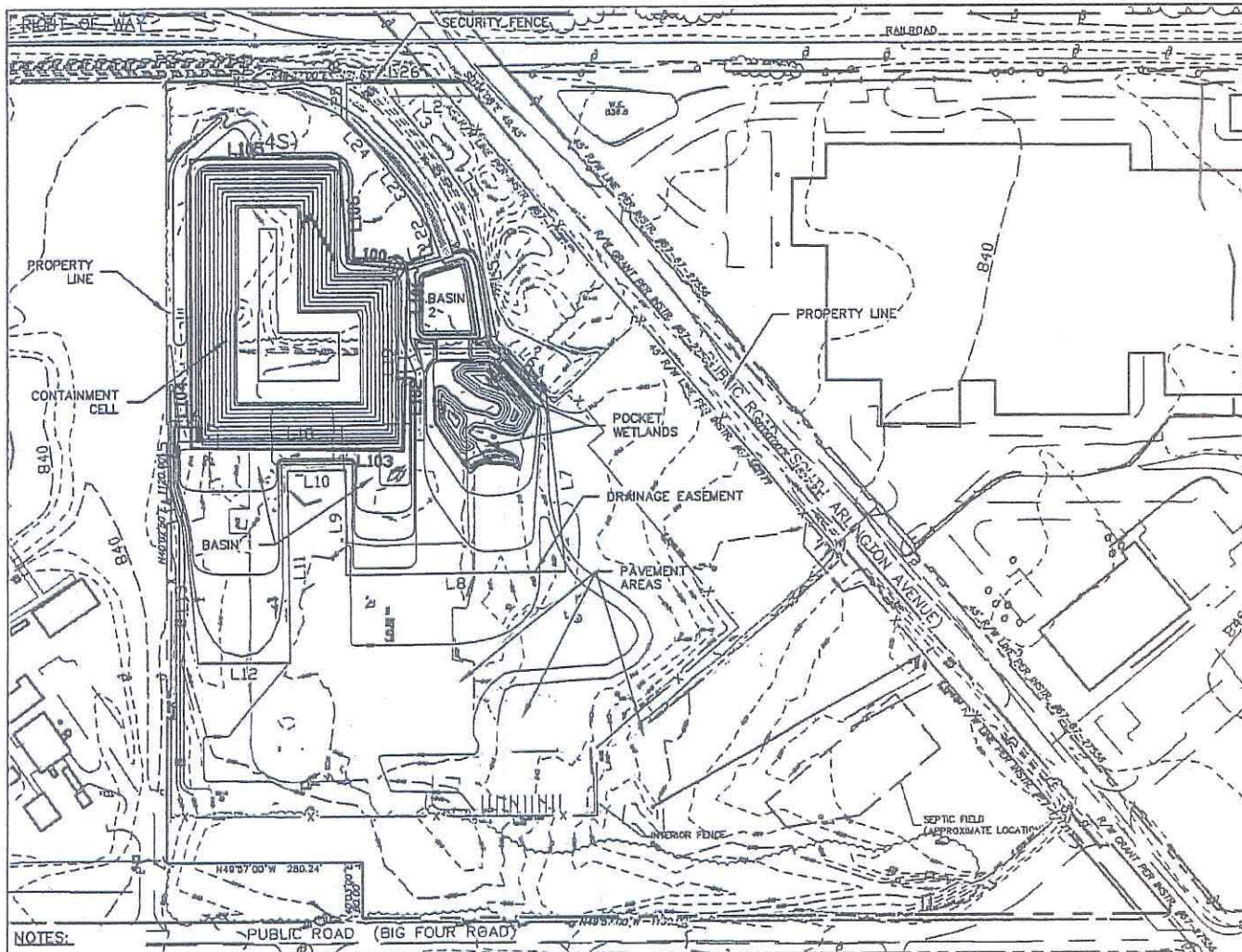
MAUREEN A. MURPHY
Notary Public, State of New York
No. 24-652193 Qual. in Ulster Co.
Certificate filed in New York County
Commission Expires March 23, 1981

This instrument was prepared by: Fred Floersheimer, Attorney
1230 Avenue of the Americas
New York, New York 10020
(212) 399-9452



OFFICIAL CERTIFIED COPY
TRUE AND COMPLETE
Katherine Sweeney Bell
RECORDER OR DEPUTY
11-17-16
DATE

79-91445



Line #/Curve #	Length	Direction/Delta
L1	26.153	S00° 10' 55.85"W
L2	119.900	N49° 42' 06.15"W
L3	107.147	S01° 20' 10.34"W
L4	85.674	S06° 31' 21.56"W
L5	197.422	S30° 02' 09.27"W
L6	101.161	S03° 32' 37.35"E
L7	259.363	S34° 09' 47.11"W
L8	312.742	N50° 16' 24.35"W
L9	148.818	N40° 10' 52.45"E
L10	83.598	N50° 05' 11.64"W
L11	275.506	S39° 30' 09.20"W
L12	131.880	N49° 42' 03.79"W
L13	192.039	N35° 00' 49.81"E
L14	70.115	N26° 01' 19.85"E
L15	81.668	N40° 16' 57.22"E
L16	41.253	S49° 42' 06.15"E
L17	26.550	S40° 17' 49.91"W
L18	280.833	S49° 42' 10.09"E
L19	233.060	N40° 17' 49.98"E
L20	23.780	N70° 21' 07.94"E
L21	50.054	S63° 50' 08.98"E
L22	79.527	N20° 06' 19.46"E
L23	89.287	N01° 39' 34.75"E
L24	72.757	N03° 45' 31.07"W
L25	53.143	N40° 17' 53.85"E
L26	166.027	S49° 42' 06.15"E

LEGEND

	Existing Contour
	Existing Building
	Former Building Footprint
	Existing Edge of Paving
	Existing Right of Way
	Existing Tree Line
	Existing Wetland Limit Line
	Existing Flood Plain Limit Line
	Existing Lot Line
	Property Line (Approximate)
	Security Fence

3700 SOUTH ARLINGTON AVENUE
BEECH GROVE, INDIANA

ERC - EXHIBIT B

ADVANCED
Geoservices

Engineering for the Environment, Planning for People.
1000 ANDREW DRIVE, SUITE 2
WEST CHICAGO, INDIANA 46060
TEL: 317.251.1000 FAX: 317.251.1001 WWW.ADVANCEDGEOSERVICES.COM

Scale	1" = 150'
Drawn by	G.A.S.
Checked by	J.A.S.
Field Notes	P.A.S.
Approved by	G.A.S.
Project No.	3005139
Issue Date	12/16/2010
Sheet No.	1 OF 2
Scale	

NOTES:

1. SITE ADDRESS:
3700 SOUTH ARLINGTON AVENUE
BEECH GROVE, INDIANA
2. THE ERC APPLIES TO THE ENTIRE PROPERTY AS DEFINED BY THE PROPERTY LINE INCLUDING BUT NOT LIMITED TO THE DRAINAGE EASEMENT FOR THE CITY OF INDIANAPOLIS (SEE TABLE ON THIS FIGURE); CONTAINMENT CELL LIMITS ARE DEFINED AS SHOWN (SEE EXHIBIT D FOR COORDINATES)
3. PARCEL NUMBER: 3005139
4. MAP: PG 335 343
5. ALT PARCEL: 49-10-27-107-002.000-302

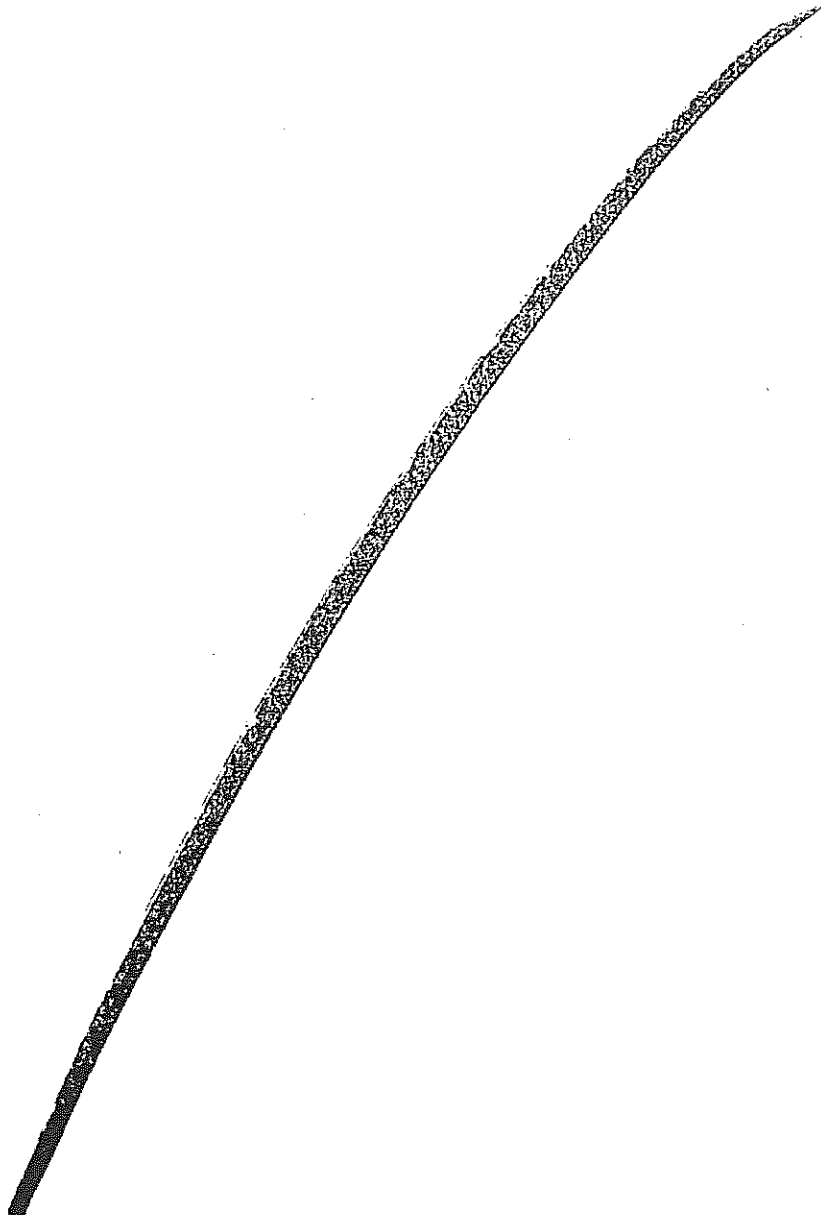


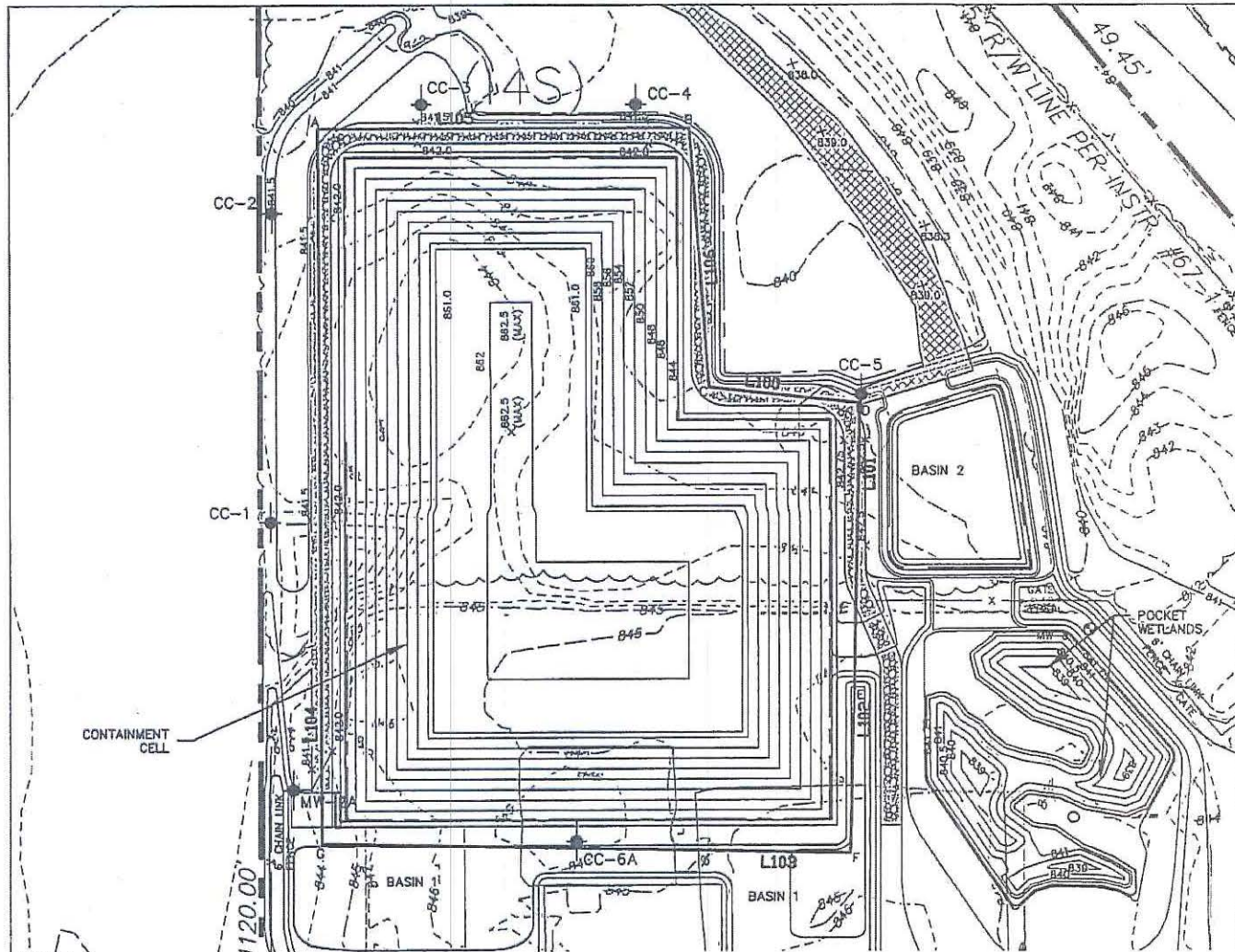
(IN FEET)
1 inch = 150 ft.

EXHIBIT C		
Contaminants of Concern (COC)		
Media	COC	Maximum Concentration Remaining Onsite
Soil ¹	Antimony	44 ppm
	Arsenic	23 ppm
	Barium	279 ppm
	Cadmium	28 ppm
	Chromium	50 ppm
	Lead	2,360 ppm
	Mercury	0.13 ppm
	Selenium	1.9 ppm
	Silver	0.04 ppm
Groundwater ²	Arsenic	58.6 ppb
	Lead	830 ppb
¹ Excludes contents of Containment Cell.		
² Unfiltered results. Maximum concentration from 2015 sampling data.		

EXHIBIT D

CONTAINMENT CELL LOCATION





Corner/Boundary Points of Containment Cell		
Point ID	Northing	Easting
A	1,628,034.685	216,042.572
B	1,627,896.972	216,205.682
C	1,627,775.910	216,117.519
D	1,627,713.234	216,177.494
E	1,627,591.238	216,069.504
F	1,627,518.942	216,005.071
G	1,627,719.870	215,777.389

LEGEND

- Existing Contour
- Existing Building
- Former Building Footprint
- Existing Edge of Paving
- Existing Right of Way
- Existing Tree Line
- Existing Wetland Limit Line
- Existing Flood Plain Limit Line
- Existing Lot Line
- Property Line (Approximate)

MW-2A Monitoring Well

Access Road

3700 SOUTH ARLINGTON AVENUE
BEECH GROVE, INDIANA

ERC - EXHIBIT D

ADVANCED
Geoservices

Engineering for the Environment, Planning for People
4000 ANDREW DRIVE, SUITE A
WEST CHESTER, INDIANA 46080
Tel: 317.461.1100 Fax: 317.461.1101 www.advancedgeoservices.com

DATE		BY
Drawn	DATE	BY
Checked	DATE	BY
Field Notes	DATE	BY
Surveyed	DATE	BY
Reviewed	DATE	BY
Final	DATE	BY
Scale	DATE	BY
Sheet	DATE	BY

NOTES:

1. SITE ADDRESS:
3700 SOUTH ARLINGTON AVENUE
BEECH GROVE, INDIANA
2. PARCEL NUMBER: 3005139
3. MAP: PG 335 343
4. ALT. PARCEL: 49-10-27-107-002.000-302
5. CONTAINMENT CELL BOUNDARY POINTS DERIVED FROM CAD FILE OF SURVEY DRAWING "POST-CONSTRUCTION SURVEY, FINAL AS-BUILT" BY USI CONSULTANTS OF INDIANAPOLIS, INDIANA.



GRAPHIC SCALE

(IN FEET)
1 inch = 150 ft.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

March 24, 2017

Mr. Matthew A. Love
Refined Metals Corporation
3000 Montrose Avenue
Reading, PA 19605

Dear Mr. Love:

Re: Closure of Waste Piles and
Surface Impoundment
Refined Metals Corporation
Beech Grove, Indiana
EPA I.D. No. IND000718130

The Indiana Department of Environmental Management (IDEM) received your certification dated July 11, 2016 (VFC #80324651), that closure has been completed as outlined in the approved closure plan and final corrective measures design. With the receipt of this certification, total closure is completed as required by 40 CFR 265 Subpart G.

Refined Metals chose to perform an industrial closure in accordance with IDEM's Risk Integrated System of Closure (RISC) guidance document. An industrial closure allows chemicals of concern to remain on site in concentrations above RISC residential default closure levels, but below industrial non-default closure levels. Closure and corrective measures included excavation of impacted soils, placement of impacted soils into a designated onsite containment cell, and restoration of the site. Post-closure care of the containment cell will be monitored by U.S. EPA pursuant to an Operation and Maintenance Plan.

Institutional controls are required for industrial closure via an Environmental Restrictive Covenant (ERC). The ERC notifies future owners or lessees of contamination present at a site and ensures that the restrictions and controls included in the approved remedy are legally recorded. Refined Metals prepared an ERC and, upon IDEM approval, recorded and permanently placed it with the property deed on March 20, 2017 (VFC #80437527).

Upon demonstration to the U.S. EPA of financial assurance for post-closure care, IDEM will release your financial assurance bond for the closure of the hazardous waste management units. Liability coverage under 329 IAC 3.1-14-24 is no longer required.

Mr. Matthew A. Love
Page Two

If you have any questions regarding this matter, please contact Ruth Jean of my office at (317) 232-3398 or by email at rjean@idem.IN.gov.

Sincerely,



Jeffrey L. Sewell, Chief
Permits Branch
Office of Land Quality

raj

cc: Tamara Ohi, U.S. EPA Region 5
Ruth Jean, IDEM
Jenny Dooley, IDEM
Nancy Johnston, IDEM

Documentation of Environmental Indicator Determination

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Refined Metals Corporation
Facility Address: 3700 Arlington Avenue, Beech Grove, IN 46203
Facility EPA ID #: IND 000 718 130

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

- ☒ If yes - check here and continue with #2 below.
☐ If no - re-evaluate existing data, or
☐ If data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of Migration of Contaminated Groundwater Under Control EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Is **groundwater** known or reasonably suspected to be **contaminated**¹ above appropriately protective levels (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

- ☒ If yes - continue after identifying key contaminants, citing appropriate levels, and referencing supporting documentation.
- ☐ If no - skip to #8 and enter AYE status code, after citing appropriate levels, and referencing supporting documentation to demonstrate that groundwater is not contaminated.
- ☐ If unknown - skip to #8 and enter IN status code.

Rationale and Reference(s):

Table 1 provides a list of exceedances based on Tables 1A-1L from *Final Corrective Measures Design (CMD), for Refined Metals Corporation, Beech Grove, Indiana*, prepared by Advanced Geoservices, revision dated September 6, 2013 and Tables 3a-3e; 4a-4b; and 6a-6e from *Annual Report of Groundwater Sampling Data for Refined Metals Facility*, prepared by Advanced Geoservices, dated March 31, 2014.

¹ Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate levels (appropriate for the protection of the groundwater resource and its beneficial uses).

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within existing area of contaminated groundwater² as defined by the monitoring locations designated at the time of this determination)?

 x If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the existing area of groundwater contamination²).

 If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination²) - skip to #8 and enter NO status code, after providing an explanation.

 If unknown - skip to #8 and enter IN status code.

Rationale and Reference(s):

Based on available data, the general extent of contamination has not changed significantly over the last several years, with data available for some wells for a 14-year period. For example, the groundwater flow is predominantly to the south/southeast, which places monitoring wells MW-5 and MW-6S in the downgradient direction. Total arsenic and lead (MCL criteria are 10 µg/L and 15 µg/L, respectively) concentrations in MW-5 in September 1999 were 8.4 µg/L and non-detect, respectively, while in November 2013 the concentrations were 4.0 and 0.72 µg/L, respectively. For well MW-06S, total arsenic and lead concentrations in September 1999 were 8.8 µg/L and 21.0 µg/L, respectively, while in November 2013 their concentrations were 1.7 µg/L and 0.3 µg/L, respectively. Note, historically the MCL criteria are exceeded at other monitoring wells that are in upgradient locations. This is further presented in various data tables (i.e., Tables 1A through 1L) provided in Reference 3. Analytical data and trends will be further evaluated as additional data become available.

Reference 3, Section 4.1.1 indicates that the results of the Phase I RFI sampling detected the presence of antimony, barium, cadmium, chromium, mercury, selenium and silver. With only some exceptions; concentrations of these parameters were consistently below the Region 9 Preliminary Remediation Goals (PRGs) used for screening results of the Phase 1 RFI sampling in the corrective action areas (i.e., areas outside the boundaries of the HWMUs). Therefore, only lead and arsenic were retained as constituents of concern

² “existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of contamination that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of contaminated groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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in soil and sediment during corrective action measures. According to Table 1A from Reference 3, the MCL for selenium was exceeded one time at MW-1 in December 1999. The MCL for selenium is 50 µg/L and the level detected at MW-1 was 73 µg/L. Reference 3 (Tables 1A-L) indicate that no other selenium exceedances were detected in any onsite wells during sampling events between 1999 and 2007. Historic sampling detected antimony at a maximum concentration of 14 ug/l, exceeding the MCL of 6. Antimony has not been detected in recent sampling.

The assessment of concentration trends for iron and manganese is based on data from analysis conducted from 2007 to 2013 (2014 data not yet available). Data consists of semi-annual groundwater sampling (2007 to 2013) at monitoring wells MW-05, MW6SR, MW-9, MW-11 and MW-12. EPA's Regional Screening Level for iron is 14,000 micrograms per liter (ug/l) and 430 ug/l for manganese. Based on the data for the period 2007 to 2013, there does not appear to be a consistent trend for the iron and/or manganese data in these monitoring wells. For many of the monitoring wells, concentrations of both iron and manganese are actually higher during the middle or later portion of the time period. For MW-5, iron and manganese concentrations in January 2007 were 1,000 ug/l and 230 ug/l respectively, and were 1,400 ug/l and 260 ug/l respectively in April 2013. The lowest concentration in MW-5 for both constituents occurred in August 2007 (830 ug/l for iron and 170 ug/l for manganese) and the highest concentration for iron occurred in May 2011 at 2,700 ug/l for iron and in May 2012 at 280 ug/l for manganese. Similar concentrations and variability was noted in monitoring wells MW-9 and MW-12, while concentrations were slightly higher overall in MW-11. For MW-6SR, concentrations were an order of magnitude higher in general and an increasing trend noted. The iron and manganese concentrations in January 2007 were 2,600 ug/l and 99 ug/l respectively and were 15,000 ug/l for iron and 2,300 ug/l for manganese in April 2013. These concentrations also represent the lowest and highest concentrations for both constituents respectively. A high of 14,000 ug/l for iron was observed in May 2008, but concentrations decreased somewhat from 2008 until rebounding to the high in April 2013. Manganese concentrations rose from 2007s' low to the high in April 2013. Maximum concentrations of iron and manganese are greater than the RSL and additional monitoring will be conducted to further assess any trends and verify contamination remains within the existing area.

Based on the requirement for this component, it appears that the "migration" of contaminated groundwater is under control with regard to impacts remaining within the (historical) "existing area of contaminated groundwater" at/on the facility.

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4. Does contaminated groundwater **discharge** into **surface water** bodies?

- X If yes - continue after identifying potentially affected surface water bodies.
- If no - skip to #7 (and enter a YE status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater contamination does not enter surface water bodies.
- If unknown - skip to #8 and enter IN status code.

Rationale and Reference(s):

Based on the presence of multiple drainage canals, impoundment/lagoon and related surface water features at the site, the answer to this component is "yes." The Corrective Measures Design (Reference 3) discusses the planned remedial actions for drainage ditches (see Sections 4.4 and 6.4 of Reference 3) that have been impacted by run-off and erosion.

Off-site surface water bodies in the vicinity of the site are identified in Reference 1, Section 3.1, p. 16. There is an intermittent stream that flows from the northern portion of site to the northwest to the headwaters of **Beech Creek** (distance not provided). Historically, surface water from other areas of the site and the impoundment potentially flowed to a drainage ditch that flowed off-site to the east, and then to the south eventually discharging to **Sloan Ditch**. Sloan Ditch flows 0.6 mile west-southwest to **Churchman Creek**, which flows to the west 0.9 mile and discharges to Beech Creek. Beech Creek flows 1.2 miles to the southwest to **Lick Creek**, which then flows 7 miles to the **White River**.

Section 3.3., p. 17 states the sand and gravel glacial outwash that coincides with the courses of the White River and **Fall Creek** is the aquifer of greatest economic importance. The location of this aquifer generally coincides with the glacial melt water and outwash deposits along the major streams. Fall Creek enters White River upstream of the site. The White River sand and gravel aquifer is located approximately 5.3 miles west of the site. The sand and gravel aquifer is unconfined and flows toward and discharges to the surface water bodies.

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5. Is the **discharge** of contaminated groundwater into surface water likely to be **insignificant** (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater level, and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

 x If yes - skip to #7 (and enter YE status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

 If no - (the discharge of contaminated groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater levels, the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

 If unknown - enter IN status code in #8.

Rationale and Reference(s):

Based on information provided in historic RCRA Facility Investigations (References 1 and 2), and the CMD, it appears that documented impacts to surface water/sediment are limited. Section 4.4.4 of the CMD (Reference 3) states that only one sediment sample within the storm water lagoon exceeded the cleanup criterion for arsenic. As well, Section 4.4.4 of the CMD also states that respective discharge limits (for surface waters) developed for the temporary discharge permit have not been exceeded at the unit discharge point. As implementation of the CMD occurs, additional assessment will be conducted to further verify that the answer continues to be "yes."

It should be noted that iron and manganese have been detected in MW-3 and MW-6-6SR, although at concentrations less than ten times the RSL. Based on the levels detected, iron and manganese will be further evaluated for potential impacts to surface water. According to Section 5.5.2 of Reference 3, during the first two quarterly groundwater sampling events for MNA monitoring, samples will be analyzed for total and dissolved arsenic and lead, sulfide, sulfate, nitrate, arsenic speciation (arsenite/arsenate), iron speciation (ferric/ferrous), and manganese speciation (MnII/MnVII) for use in geochemical

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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modeling. Potential impacts to surface water will be reassessed after data from the second quarterly groundwater sampling event are available.

Reference 5 (Cover letter page 2 of 3) reports that 2013 sample results for total arsenic or lead find that for a "well by well comparison, none of the constituents analyzed exceeded the USEPA MCLs where such a value exists." With regard to trend analysis, Reference 5 also includes a summary of statistical analyses performed on data collected beginning in November 2007, as indicated below:

- Based on the statistical analysis for Site Specific Parameters relative to MW-9 presented in Appendix A, total and dissolved arsenic in MW-5 and total arsenic in MW-6SR indicated a statistically significant increase. The calculated t-value for total and filtered arsenic (i.e., dissolved) in MW-5 and total arsenic in MW-6SR shows "significant difference." The highest observed total result in MW-5 during 2013 was 4.8 µg/L and the highest filtered result in MW-5 during 2013 was 2 µg/L; while the highest observed result for the total arsenic in MW-6SR during 2013 was 7.7 µg/L, all of which are less than the MCL of 10 µg/L.
- Based on the statistical analysis for Site Specific Parameters relative to MW-11, a significant decrease exists for total arsenic in MW-12, with neither monitoring well being above the MCL of 10 µg/L. RMC began sampling MW-11 as an alternate background well after the November 2007 sampling event when results suggested that during low groundwater periods MW-9 may potentially be downgradient of a portion of the former facility operations.

Historically, according to Tables 1A-1L in Reference 3, two monitoring wells indicated the highest concentrations relative to respective screening values:

- During a January 24, 2007 sampling event, MW-3 indicated total arsenic at 170 µg/L (greater than 10 times the MCL of 10 µg/L). This result was considerably higher than the next highest reading at MW-3 (28 µg/L) and was attributed to high well turbidity during that sample event (Reference 3, Section 4.5, p. 4-7.)
- During the October 27, 2003 and January 25, 2007 sampling events total arsenic was reported at 290 µg/L and 190 µg/L respectively, and total lead was reported at 217 µg/L in MW-7/7S. At downgradient monitoring well MW-8:
 - Total arsenic was reported above the MCL at 13 ug/l and 19 ug/l during the December 11, 2011, and October 28, 2003 sampling events, respectively. Both of these sampling results are less than 10 times the MCL.
 - Total lead was reported above the MCL for all sampling events in 2001, 2003 and 2007 with the highest level of 55 ug/l reported during the October 28, 2003 sampling event. These concentration are less than 10 times the MCL.

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Based on the above information for the recently monitored wells, groundwater discharge into surface water bodies is likely to be insignificant.

6. Can the **discharge** of contaminated groundwater into surface water be shown to be **currently acceptable** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

—— If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the sites surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment levels, as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

—— If no - (the discharge of contaminated groundwater can not be shown to be **currently acceptable**) - skip to #8 and enter NO status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

—— If unknown - skip to 8 and enter IN status code.

Rationale and Reference(s):

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refuge) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the existing area of contaminated groundwater?
- ☒ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the existing area of groundwater contamination.
- ☐ If no - enter NO status code in #8.
- ☐ If unknown - enter IN status code in #8.

Rationale and Reference(s):

The CMD plans for soil, sediment and groundwater sampling concurrently with and following implementation of the Corrective Measures. In addition, multiple rounds of groundwater monitoring will occur in conformance with a MNA plan included as Attachment H to the CMD.

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Refined Metals facility, EPA ID #IND 000 718 130, located in Beech Grove, Indiana. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

☐ IN - More information is needed to make a determination.

Completed by (signature) Tamara Ohl Date 9-23-14
(print) Tamara Ohl
(title) Corrective Action Project Manager

Supervisor (signature) Tammy Moore Date 9/23/14
(print) Tammy Moore
(title) Section Chief, LCD, RRB, CAS2
(EPA Region or State) Region 5

Locations where References may be found:

EPA Region 5 Records Room, 7th Floor
77 West Jackson Boulevard
Chicago, IL 60604

Contact telephone and e-mail numbers

(name) Tamara Ohl
(phone #) 312-886-0991
(e-mail) ohl.tamara@epa.gov

Table 1
Summary of Inorganic Compounds Detected in Groundwater Beneath the Refined Metals Site
September 1999 - November 2013

Constituent	Historical Maximum On-Site Concentration (µg/L)	Monitoring Well Location	2013 Maximum On-Site Concentrations	Monitoring Well Location (Date)	US EPA MCL (µg/L)	Regional Screening Level for Tapwater (µg/L) ¹	Exceeds One or Both EPA Limits?
Total Metals							
Antimony	14	MW-8/8S	2.3 U	MW-12 (4/30/2013)	6	7.8	Yes
Arsenic	290	MW-7/7S	8.3	MW-11 (4/30/2013)	10	6	Yes
Barium	276	MW-4	-	-	2,000	3,800	No
Cadmium	0.8	MW-8/8S	-	-	5	9.2	No
Calcium	470,000	MW-7/7S	-	-	NA	NA	No
Chromium	26	MW-6S/6SR ²	-	-	100	NA	No
Iron	30,000	MW-3	15,000	MW-6SR (4/30/2013)	NA	14,000	Yes
Lead	217	MW-7/7S	13	MW-12 (4/30/2013)	15	NA	Yes
Magnesium	610,000	MW-10	-	-	NA	NA	No
Manganese	2,300 J	MW-6S/6SR ²	2300 J	MW-6SR (4/30/2013)	NA	430	Yes
Mercury	U	-	-	-	2	0.63	No
Selenium	73	MW-1	-	-	50	100	Yes
Silver	U	-	-	-	NA	94	No
Sodium	1,000,000	MW-10	-	-	NA	NA	No
Conventionals							
Chloride	450	MW-11	450	MW-11 (4/30/2013)	NA	NA	No
Sulfate	330	MW-9	290	MW-9 (4/30/2013)	NA	NA	No

Sources: 2013 Annual Report of Groundwater Sampling Data; Data Validation Report of Groundwater Samples Collected on April 30, 2013 for Inorganic and Conventional Analyses; Data Validation Report of Groundwater Samples Collected on November 12, 2013 for Inorganic and Conventional Analyses; Final Corrective Measure Design for Refined Metals Corporation, Beech Grove, Indiana.

Notes:

J - The analyte was positively detected; however the concentration was estimated as the result was less than the quantitation limit.

MCL - maximum contaminant levels

U - The analyte was not detected at the quantitation limit.

µg/L - micrograms per liter

¹ EPA Regional Screening Level for Tapwater TR =1E-06 and THQ=1.0

² MW-6S reconstructed as MW-6SR between 12/15/1999 and 9/24/2001 sampling events

Yellow highlights indicate an exceedance of a screening value.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

October 4, 2013

Mr. Matthew A. Love
Refined Metals Corporation
c/o Exide Technologies
P.O. Box 14294
Reading, PA 19612-4294

Dear Mr. Love:

Re: Bond Rider to Add EPA
Refined Metals Corporation
Beech Grove, Indiana
IND000718130

IDEM has received your September 30, 2013 letter providing the rider to surety bond number SUR0014548 for Refined Metals Corporation, Beech Grove, Indiana. The rider adds EPA as an Obligee on the surety bond. As discussed via e-mail, the third paragraph of the enclosed bond rider is unacceptable to IDEM. IDEM is amenable to a bond rider to add EPA if the surety company removes the third paragraph of the bond rider.

If you have any questions, please contact me at (317) 232-3398 or e-mail at rjean@idem.IN.gov.

Sincerely,

Ruth A. Jean
Senior Environmental Manager
Hazardous Waste Permit Section
Permits Branch
Office of Land Quality

Enclosure

cc: Jonathan Adenuga, U.S. EPA, Region 5 (w/out enclosure) ✓



Refined Metals Corporation

VIA FEDERAL EXPRESS

September 30, 2013

Ms. Ruth Jean
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, IN 46204

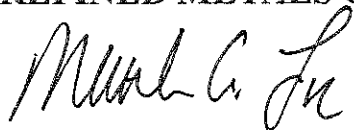
Re: Rider to Add EPA as Obligee on Surety Bond
Refined Metals Corporation (RMC)
Beech Grove, Indiana

Dear Ms. Jean:

Per our recent conversations, the EPA has requested to be added as an obligee on the surety bond submitted to IDEM to cover financial assurance obligations for the subject facility. IDEM is agreeable to this. Attached is the original Dual Obligee Rider that adds EPA as an obligee. After IDEM approves and signs the attached rider, our surety company indicates that EPA only needs copy of the surety bond and rider to draw on the bond. I can provide EPA both; however, I'll need a copy of the rider which has been signed by IDEM. If the rider is acceptable to IDEM, please have it signed and email me a copy so I can forward a complete copy to EPA. Feel free to contact me should you have any questions.

Sincerely,

REFINED METALS CORPORATION



Matthew A. Love

Enclosure

cc: Jonathan Adenuga -- EPA (w. encl.)

257 West Mallory Avenue • Memphis, Tennessee 38109
3700 S. Arlington Avenue • Beech Grove, Indiana 46203
Mailing Address: c/o Exide Technologies, P.O. Box 14294, Reading, PA 19612-4294

DUAL OBLIGEE RIDER

To be attached to and to form a part of Financial Guarantee Bond No. SUR0014548, dated 8/10/2011, issued by Argonaut Insurance Company as Surety, on behalf of Exide Technologies as Principal and in favor of Indiana Department of Environmental Management as Obligee.

The Financial Guarantee Bond aforesaid shall be amended to add as additional Obligee, the name of United States Environmental Protection Agency.

PROVIDED, HOWEVER, there shall be no liability under this bond to the Obligees, or either of them, unless the said Obligees or either of them, shall make payments to the Principal strictly in accordance with the terms of said contract as to payments, and shall perform all of the other obligations to be performed under said contract at the time and in the manner therein set forth; all of acts of one Obligee being binding on the other.

PROVIDED FURTHER, that this rider shall not become effective until accepted by Indiana Department of Environmental Management.

The attached bond shall be subject to all of its terms, conditions and limitations except as herein modified. Provided, further that the Principal and Surety shall not be liable to all Obligees in the aggregate in excess of the penal sum of the bond.

Signed, sealed and dated this 25th day of September, 2013.

Exide Technologies

Principal

By: _____

NICHOLAS J. IVANOW

Argonaut Insurance Company

Surety

By: _____

Frank Kinnett, Attorney-in-Fact

ACCEPTED:

Indiana Department of Environmental Management

By: _____



AS-0050384

Argonaut Insurance Company
Deliveries Only: 225 W. Washington, 6th Floor
Chicago, IL 60606

United States Postal Service: P.O. Box 469011, San Antonio, TX 78246

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the Argonaut Insurance Company, a Corporation duly organized and existing under the laws of the State of Illinois and having its principal office in the County of Cook, Illinois does hereby nominate, constitute and appoint:

Frank Kinnett and John E. Genet

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on its behalf as surety, and as its act and deed any and all bonds, contracts, agreements of indemnity and other undertakings in suretyship provided, however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

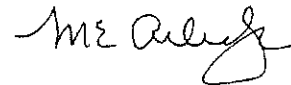
\$25,000,000.00

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolution adopted by the Board of Directors of Argonaut Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the Company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the Argonaut Insurance Company, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Argonaut Insurance Company has caused its official seal to be hereunto affixed and these presents to be signed by its duly authorized officer on the 15th day of June, 2012.

Argonaut Insurance Company



by: _____
Michael E. Arledge, President

STATE OF TEXAS
COUNTY OF HARRIS SS:

On this 15th day of June, 2012 A.D., before me, a Notary Public of the State of Texas, in and for the County of Harris, duly commissioned and qualified, came THE ABOVE OFFICER OF THE COMPANY, to me personally known to be the individual and officer described in, and who executed the preceding instrument, and he acknowledged the execution of same, and being by me duly sworn, deposed and said that he is the officer of the said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority and direction of the said corporation, and that Resolution adopted by the Board of Directors of said Company, referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Harris, the day and year first above written.





(Notary Public)

I, the undersigned Officer of the Argonaut Insurance Company, Illinois Corporation, do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand, and affixed the Seal of said Company, on the 25th day of September, 2013.



Joshua C. Betz, Vice President

July 29, 2013



Department of Code Enforcement
Indianapolis
Gregory A. Ballard, Mayor

Mr. Paul Stratman
Advanced GeoServices
01055 Andrew Drive, Suite A
West Chester, PA 19380

NOTICE
OF
DRAINAGE APPROVAL
For Projects Greater than 1 Acre
This is Not a Permit

RE: Refined Metals
3700 South Arlington
DRN11-00784

Dear Mr. Stratman:

The City of Indianapolis Department of Code Enforcement has reviewed the proposed construction plans, drainage calculations, and application for the above referenced project. We have found that the submitted documents appear to be in substantial compliance with Chapter 561, Drainage and Sediment Control Ordinance, Code of Indianapolis and Marion County, Indiana and the Flood Control District Zoning Ordinance of Marion County, Indiana Chapter 735. We therefore, grant storm water drainage approval for this project. We have based our approval upon the accuracy of the proposed plan, specifications, and proper certification.

You should not construe this notice of approval to be a building permit or a waiver of any other applicable provisions of local zoning ordinances, utility regulations or building codes. In addition, the issuance of this notice of approval does not relieve the property owner of the responsibility to obtain all other applicable permits, easements, or approvals that may be required for this project.

As a requirement of the State's regulation governing storm water runoff and construction site erosion and sediment control (327 IAC 15-5) you are required to submit an erosion and sediment control plan to the Marion County SWCD, and a Notice of Intent (and any required fees and application) to the Indiana Department of Environmental Management (IDEM) prior to the initiation of land disturbing activities. Land disturbing activities under state law mean any manmade change of the land surface, including the removal of vegetative cover, excavating, filling, transporting and grading. Submittal of your DCE-approved erosion and sediment control plan, SWPPP and a copy of this APPROVAL LETTER to the Marion County SWCD prior to engaging in any land disturbing activity will fulfill the State's requirement to submit a soil erosion and sediment control plan (though you are still required to submit the Notice of Intent to IDEM pursuant to 327 IAC 15-5-5).

I. DESIGN APPROVAL AND PERMIT ISSUANCE

The City of Indianapolis hereby notifies the Owner that the plans are in general conformity to applicable design criteria established by City Ordinance, Standards and Specifications and are hereby approved. All detail dimensions and quantities have not been completely checked. The full responsibility of the Owner and their Agent(s) is not relieved by this approval.

Department of Code Enforcement

1200 Madison Ave., Ste. 100 | Indianapolis, IN 46225 | Phone: (317) 327-8700 | www.indy.gov/dce
Fax Numbers: Building - 327-8475 | Business Licensing - 327-0817 | Contractor Licensing - 327-8401
Crafts - 327-5397 | Infrastructure/Right of Way - 327-3125 | Permits - 327-5174 | Zoning - 327-8696

If modification or addendum to the proposed construction project is required by the Owner(s), a revised set of construction plans that accurately delineate all changes and/or amendments must be submitted and approved by this Department before the commencement of construction activity.

Owner is provided notice and direction to the following:

1. Submit four (4) sets of Final Construction Plans to the Project Compliance Analyst (PCA) at the address listed below. Please be sure these plans note the latest revision date and are titled "**Final Construction Plans.**"
2. Please pay the Final Plan Review fee of **\$726.00**. This fee represents the total review fee less the fees paid to date (\$1,245.00- \$519.00). Checks should be made payable to the **City of Indianapolis**. Payment is due immediately. Please be advised that the Department has no knowledge regarding contractual obligations for payment of fees amongst various parties of a project, and therefore holds the signed Applicant responsible for payment of review fees.
3. Please pay the initial stormwater quality inspection three (3) year fee of **\$2,115.00** which is \$705.00 per BMP utilized in this project.
4. Please submit an executed original **Grant of Perpetual Drainage Easement and Right of Way**. This document will then be executed by the City and returned to the applicant for recording. A copy of the recorded document must then be returned to this office.
5. Please submit two (2) signed and notarized paper and one (1) digital copy of the BMP O&M Manual.
6. Please submit a fully executed **AGREEMENT FOR CONSTRUCTION OF STORMWATER DRAINAGE SYSTEM UNDER PRIVATE CONTRACT** (With the System to Remain Private) with notarized signatures of legal Owner and Contractor.
7. Obtain the **Drainage and/or Flood Permit** from the Department of Code Enforcement. If the Permit is not obtained within one (1) year from the date of this Notice this approval shall be void.

II. CONSTRUCTION ACTIVITIES

Construction activities may not begin before completion of the following:

1. Owner or Contractor will schedule and attend a **pre-construction conference**. Contact myself to schedule a meeting time and place. The Inspecting Engineer will be assigned at this meeting. Contractor attendance is mandatory. The **inspection fee** for this project is based upon an inspection-billing rate of \$65.00 per hour with average inspection time between twenty (20) and thirty (30) hours per week of construction. The actual inspection cost is dependent on site conditions. Inspection costs will be invoiced directly by the Inspecting Engineer on a monthly basis.
2. An Improvement Location Permit(s) (ILP) may be required by the Department of Code Enforcement for this project. The items to be submitted should include (but are not limited to):
 - A completed ILP Application
 - 2 copies of the legal description for the site
 - 2 copies of the site plan drawn to scale, showing all information necessary for ILP review
 - 2 copies of the landscape plan
 - Any approved Letters of Petition which include rezoning, variance and or approval case.

For Additional information regarding the above, please call 327-8700 and request a detailed checklist.

III. PROJECT ACCEPTANCE:

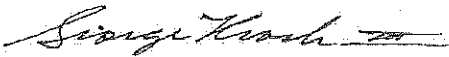
The following must be completed during/after project construction/completion:

1. A **final inspection** must be satisfactorily completed. Contact the Inspecting Engineer to schedule this final inspection. The **balance of inspection costs** must be paid to the Inspecting Engineer prior to project acceptance or release of connection permits.
2. A **Completed Improvement Stormwater Drainage Project Contractor Affidavit** must be processed with this office. Contact myself to obtain a copy of this form for processing.
3. Submit one (1) set of "**As-Built**" **mylars** (i.e. title page, site/development plan(s), specification(s), and detail(s)). All numbers and letters must be a minimum 1/4" in height (deliver originals to myself). **Also submit a copy of the "As-Built" in digital form.** The file format will be AutoCAD Drawing Interchange File (DXF) format.

To expedite the permitting process, please bring this letter with you when obtaining your permit.

If you have any question regarding this approval, please call me at 327-8461.

Sincerely,



George Krack III
Project Compliance Analyst
Department of Code Enforcement
City of Indianapolis
cc: File
Owner



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.in.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

ISOLATED WETLAND INDIVIDUAL PERMIT

VIA CERTIFIED MAIL: 91 7190 0005 2710 0028 1326

PERMIT NO.: IWIP 2013-180-49-SKG-A

PROJECT NAME: Refined Metals Corrective Measures

AUTHORITY: IC 13-18-22-3

DATE OF ISSUANCE: June 25, 2013

DATE OF EXPIRATION: June 25, 2015

APPROVED:

Mary E. Hollingsworth, Branch Chief
Surface Water, Operations & Enforcement Branch
Office of Water Quality

APPLICANT AND PERMITTEE: Matthew Love
Refined Metals Corporation
P.O. Box 14294
Reading, PA 19612

AGENT: Paul Stratman
Advanced GeoServices
1055 Andrew Drive Suite A
West Chester, PA 19380

PROJECT LOCATION: Marion County

Section 27, Township 15 North, Range 4 East, Beech
Grove USGS Quad

The project is located at 3700 South Arlington Avenue
in Beech Grove.



Refined Metals Corrective Measures

Page 2

ISOLATED WETLANDS

ON PROPERTY:

Wetland 1 Class II 0.20 acre Forested

Total acreage: 0.20 acre

ISOLATED WETLANDS

EXEMPT:

None

REGULATED ISOLATED

WETLAND IMPACTS:

Wetland 1 Class II 0.11 acre Forested

Total regulated impact: 0.11 acre

PERMITTED ACTIVITY:

The excavation of 0.11 acre of Wetland 1 (Class II) to create an area for storm water management purposes. Impacts to jurisdictional wetlands will be permitted under a separate 401 Individual Permit (2013-180-49-SKG-A)

MITIGATION:

Creation of 0.17 acre of a Class II wetland at the project site.

MITIGATION LOCATION:

Marion County

Section 27, Township 15 North, Range 4 East, Beech Grove USGS Quad

The mitigation is located at 3700 South Arlington Avenue in Beech Grove.

MITIGATION RATIOS:

Class of Wetland Impacts: II

Type of Wetland Impacts: Forested

Class of Wetland Replacement: II

Type of Wetland Replacement: Forested

Onsite Mitigation

Required Ratio: 1.5:1

Total Class II Mitigation: 0.17 acre

GENERAL CONDITIONS OF THE INDIVIDUAL PERMIT:

You shall:

1. Install erosion control methods prior to any soil disturbance to prevent soil from leaving the construction site. Appropriate erosion control methods include, but are not limited to, straw bale barriers, silt fencing, erosion control blankets, phased construction sequencing, and earthen berms. Monitor and maintain erosion control structures and devices regularly, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.
2. Install silt fence or other erosion control measures around the perimeter of any wetlands and/or other waterbodies to remain undisturbed at the project site.
3. Execute the project as proposed in the application dated March 21, 2013, and received March 26, 2013.
4. Implement the mitigation plan as described in (a) the application received March 26, 2013, (referred to collectively hereinafter as the "mitigation plan"), and as modified by the conditions of this permit. The wetland(s) created or restored pursuant to the mitigation plan shall be referred to hereinafter as the "mitigation wetland" or "mitigation wetlands."
5. Complete all activities necessary to create the mitigation wetland within one (1) year of the effective date of this permit, unless IDEM grants a written extension upon request. These activities include excavation, grading, installation of hydrologic controls, and planting.
6. Clearly identify on-site all mitigation wetlands after construction of the mitigation wetlands. Install survey markers to identify the boundaries of the wetlands. If the mitigation wetlands being created are adjacent to or near existing wetlands, then the survey markers must distinguish the created wetland from the existing wetland.
7. Monitor the mitigation wetland annually for a minimum period of three (3) continuous years to determine if it is meeting the success criteria specified in **Condition 9**. If the site does not meet the specified success criteria for two consecutive years in this three year period, then you will monitor the site for an additional two years for a total of five years. The monitoring must start no later than one full growing season after construction, and monitoring reports must be submitted to this office by December 31 of each year until released from monitoring by this office. These reports shall contain information concerning what steps you have taken to create the mitigation wetland and

whether the wetland is achieving each of the success criteria specified in **Condition 9**. The reports shall include the following:

- a) The IDEM identification number.
- b) As-built plans (in the first year's report).
- c) Discussion of hydrology at the mitigation site.
- d) Discussion of plant community development at the mitigation wetland site.
- e) Discussion of methods or means used to determine compliance with the success criteria.
- f) Photographs representative of the mitigation wetland site and sampling points.
- g) Identification of any problems with meeting the success criteria.
- h) Recommendations for correcting any problems identified.
- i) Wetland delineation for the mitigation wetland in the final monitoring report.

For IDEM to release the mitigation site you must demonstrate to IDEM, through your monitoring reports, that the site meets or exceeds the success criteria for at least two (2) consecutive years. Once you believe that the site meets or exceeds all of the success criteria, you may submit a proposed final monitoring report to IDEM and suspend monitoring. If IDEM confirms that the mitigation site meets or exceeds all of the success criteria, then IDEM shall notify you that the mitigation is complete and that you may permanently discontinue monitoring. If the site fails to meet the success criteria then corrective actions and extended monitoring will be required. Extended monitoring may constitute the sole corrective action if IDEM believes that the site needs more time to meet the success criteria. These corrective actions may also include additional grading, planting, relocation, or other actions deemed necessary by IDEM to meet the success criteria.

8. Include a delineation of all mitigation wetlands in the final monitoring report. The delineation must be conducted on-site using the hydrology and vegetation parameters from the United States Army Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1 (January 1987). The delineation report must include data sheets and a survey, map or drawing with area measurements (in acres) of all mitigation wetland boundaries.
9. Ensure that the mitigation wetland meets all of the following success criteria at the end of monitoring:
 - a) The area of wetland established, as measured by a wetland delineation, must meet or exceed the 0.17 acre of wetland compensatory mitigation required.
 - b) Greater than 50% of the dominant vegetation species must have a wetland indicator of FAC (i.e., facultative) or wetter.
 - c) The hydrology at the mitigation wetland site must meet the wetland

hydrology criteria contained in the United States Army Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1 (January, 1987).

- d) The combined surface areal coverage of *Phalaris arundinacea* (reed canary grass) and *Typha spp.* (cattail) shall not exceed 15% of the mitigation wetland.
 - e) The mitigation wetland is free of the following exotic species: *Lythrum salicaria* (purple loosestrife), *Phragmites australis* (common reed), and *Myriophyllum spicatum* (water milfoil).
 - f) Native plant species excluding *Typha spp.* (cattail) must have an areal cover of at least:
 - i) 70% in saturated tree, shrub, sedge meadow, or wet prairie communities.
 - ii) 50% in inundated tree or shrub, and shallow emergent communities.
 - iii) 30% in deep emergent communities. Average water depth > 8 inches.
 - iv) 10% in floating aquatic communities. Average water depth > 1.5 feet.
 - g) No more than 10% of the surface area coverage of the mitigation wetland may be open water, bare ground, or a combination of the two. Open water and bare ground are defined as areas with less than 10% areal vegetative cover.
 - h) Any additional success criteria specified in the mitigation plan or subsequent certifications.
10. Submit as-built plans with the first year's monitoring report for the mitigation wetland(s). As-built plans shall include the final grade elevations at one foot contours, including a plan view and cross sections, including cross-sections along the primary axis and secondary axis of the mitigation wetland(s). In addition, as-built plans shall include locations and elevations of structures (e.g., culvert inverts, outfalls, inlets, berms, piezometers, wells, etc.). As-built plans shall also include the species and quantities of each species that were planted. *Deviations from the approved mitigation plan must be highlighted and explained.*
11. File a signed and recorded environmental notice, which describes the compensatory mitigation contained in the mitigation plan, with the department within sixty (60) days of the release from monitoring requirements. You may substitute a copy of a properly recorded deed restriction or conservation easement protecting the mitigation site(s) to satisfy this condition.
12. Clearly mark the construction limits at the project site during construction.

13. Contact the IDEM Storm Water permits section at 317-233-1864 concerning the possible need for 327 IAC 15-5 (Rule 5) permits if you plan to disturb greater than one (1) acre of soil during construction.
14. Contact the Indiana Department of Natural Resources at 317-232-4160, or toll free at 877-928-3755, for possible Construction in a Floodway Permit requirements.
15. Complete all approved discharges no later than two (2) years of the date of issuance of this Isolated Wetland Individual Permit. You may request a one (1) year extension to the Isolated Wetland Individual Permit by submitting a written request ninety (90) days prior to the deadline stated above. The written request shall contain an account of which discharges and mitigation have been completed and list the reasons an extension is requested.
16. Allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials:
 - a. to enter your property;
 - b. to have access to and copy at reasonable times any records that must be kept under the conditions of this permit;
 - c. to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this permit; and any mitigation wetland site;
 - d. to sample or monitor any discharge of pollutants or any mitigation wetland site.

This permit approval does not relieve you from the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160, or toll free at 877-928-3755, concerning the possible requirement of a Natural Freshwater Lake or Construction in a Floodway Permit, or the IDEM Storm Water Permits Section at 317-233-1864 concerning the possible need for 327 IAC 15-5 (Rule 5) permits if you plan to disturb greater than one (1) acre of soil during construction.

This permit does not:

- (1) authorize impacts or activities outside the scope of this permit;
- (2) authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
- (3) convey any property rights of any sort, or any exclusive privileges;
- (4) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or

(5) authorize changes in the plan design detailed in the application.

Failure to comply with the terms and conditions of this permit may result in enforcement action against you. If an enforcement action is pursued, you could be assessed up to \$25,000 per day in civil penalties. You may also be subject to criminal liability if it is determined that the permit was violated willfully or negligently.

This permit is effective 18 days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18-day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the permit within the scope of the petition for stay is stayed for 15 days, unless or until an Environmental Law Judge further stays the permit in whole or in part.

APPEALS PROCEDURES:

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

1. You must petition for review in writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.
2. You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

Office of Environmental Adjudication
100 North Senate Avenue
IGCN Room N501
Indianapolis, IN 46204

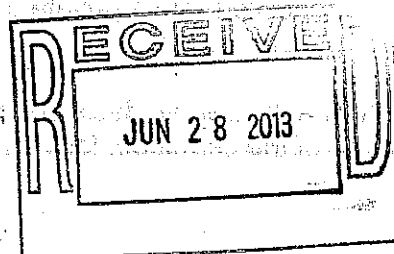
3. You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

Identifying the permit, decision, or other order for which you seek review by number, name of the permittee, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC-4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings, hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

If you have procedural questions regarding filing a petition for review you may contact OEA at 317-232-8591. If you have any questions about this permit, please contact Mrs. Samantha Groce, Project Manager, of my staff at 317-234-6233, or you may contact the Office of Water Quality through the IDEM Environmental Helpline (1-800-451-6027).

cc: Scott Pruitt, USFWS
Christie Stanifer, IDNR
Mr. Paul Stratman, Advanced GeoServices





INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

June 25, 2013

VIA CERTIFIED MAIL 91 7190 0005 2710 0028 1302

Mr. Matthew Love
Refined Metals Corporation
P.O. Box 14294
Reading, PA 19612

Dear Mr. Love:

Re: Section 401 Water Quality Certification
Project: Refined Metals Corporation
IDEM No.: 2013-180-49-SKG-A
COE No.: LRL-2012-107-lcl
County: Marion

The Office of Water Quality has reviewed your application for Section 401 Water Quality Certification dated March 21, 2013, and received March 26, 2013. According to the application, you propose to impact approximately 1,750 linear feet of jurisdictional ditches and discharge fill into 0.01 acre of Wetland 2 (0.16 ac) and into 0.06 acre of Wetland 3 (0.33 acre). The jurisdictional ditches will be returned to existing grade and planted with a native swale seed mix. Impacts to non-exempt Class II isolated wetlands will be permitted under a separate Isolated Wetland Individual Permit (IWIP 2013-180-49-SKG-A). The purpose of the work is to remove contaminated sediment. The project is located in the Section 27, Township 15 North, Range 4 East in Beech Grove, Marion County.

Based on available information, it is the judgment of this office that the proposed project will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if you comply with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in your application received March 26, 2013. Any changes in project design or scope not detailed in the application described above or modified by the conditions below are not authorized by this certification.

CONDITIONS OF THE SECTION 401 WATER QUALITY CERTIFICATION:

You shall:

- 1) Deposit any dredged material in a contained upland disposal area to prevent sediment runoff to any waterbody.



A State that Works

- 2) Install erosion control methods prior to any soil disturbance to prevent soil from leaving the construction site. Appropriate erosion control methods include, but are not limited to, straw bale barriers, silt fencing, erosion control blankets, phased construction sequencing, and earthen berms. Monitor and maintain erosion control structures and devices regularly, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.
- 3) Install silt fence or other erosion control measures around the perimeter of any wetlands and/or other waterbodies to remain undisturbed at the project site.
- 4) Allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials:
 - a) to enter your property, including impact and mitigation site(s);
 - b) to have access to and copy at reasonable times any records that must be kept under the conditions of this certification;
 - c) to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation wetland site;
 - d) to sample or monitor any discharge of pollutants or any mitigation site.
- 5) Complete all approved discharges no later than two (2) years of the date of issuance of this Section 401 Water Quality Certification. You may request a one (1) year extension to the Section 401 Water Quality Certification by submitting a written request ninety (90) days prior to the deadline stated above. The written request shall contain an account of which discharges and mitigation have been completed and list the reasons an extension is requested.
- 6) Remove any temporary causeway or other approved temporary structures used to facilitate construction or access upon completion of construction activities.
- 7) Ensure all disturbed areas are seeded and stabilized upon completion of the project.
- 8) Avoid tree clearing from April 1 through September 30.
- 9) Avoid tree removal other than within the areas depicted on the plans.
- 10) Ensure the channel is stabilized before releasing stream flows into the channel.

This certification does not relieve you of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits. In addition, you

may wish to contact IDEM's Storm Water Permits Section at 317-233-1864 concerning the possible need for a 327 IAC 15-5 (Rule 5) permit if you plan to disturb greater than one (1) acre of soil during construction.

This certification does not:

- (1) authorize impacts or activities outside the scope of this certification;
- (2) authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
- (3) convey any property rights of any sort, or any exclusive privileges;
- (4) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
- (5) authorize changes in the plan design detailed in the application.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against you. If an enforcement action is pursued, you could be assessed up to \$25,000 per day in civil penalties. You may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

This certification is effective eighteen (18) days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18-day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the certification within the scope of the petition for stay is stayed for fifteen (15) days, unless or until an Environmental Law Judge further stays the certification in whole or in part.

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

- 1) You must petition for review in writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.
- 2) You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

Office of Environmental Adjudication
100 North Senate Avenue
IGCN Room N501
Indianapolis, IN 46204

- 3) You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

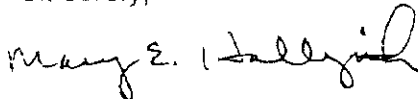
Identifying the certification, decision, or other order for which you seek review by number, name of the applicant, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC 4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings, hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

If you have procedural questions regarding filing a petition for review you may contact the Office of Environmental Adjudication at 317-232-8591.

If you have any questions about this certification, please contact Mrs. Samantha Groce, Project Manager, of my staff at 317-234-6233, or you may contact the Office of Water Quality through the IDEM Environmental Helpline (1-800-451-6027).

Sincerely,



Mary E. Hollingsworth, Branch Chief
Surface Water, Operations & Enforcement Branch
Office of Water Quality

cc: Laban Lindley, USACE- Indianapolis Field Office
Scott Pruitt, USFWS
Christie Stanifer, IDNR
Paul Stratman, Advanced GeoServices

non-responsive

This message contains information that may be confidential or privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy, or disclose to anyone this message or any information contained in the message. If you have received this message in error, please advise the sender by reply e-mail and delete all copies of this message and its attachments.

non-responsive

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DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
INDIANAPOLIS REGULATORY OFFICE
8902 OTIS AVENUE, SUITE S106B
INDIANAPOLIS, INDIANA 46216-1055
FAX: 317-547-4526

May 9, 2013

Operations Division
Regulatory Branch (North)
ID No. LRL-2012-107-lcl

Mr. Matthew Love
Refined Metals Corporation
c/o Exide Technologies
Post Office Box 14294
Reading, PA 19612

Dear Mr. Love:

This is in regard to your application dated March 19, 2013, for a Department of the Army permit to authorize the proposed remediation at the Refined Metals former secondary lead smelting facility. The remediation is being performed as a consent order requirement under the Resource Conservation and Recovery Act by the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management. The project would permanently fill 0.07 acre of wetlands, and temporarily impact 0.19 acre of wetlands, adjacent to an unnamed tributary to Beech Creek. The project is located at 3700 South Arlington Avenue, in Section 27, Township 15 North, Range 4 East, Beech Grove, Marion County, Indiana. We have reviewed the submitted data relative to Section 404 of the Clean Water Act.

We have determined that the proposed project is authorized under the provisions of our Nationwide Permit (NWP) 33 CFR 330 (38) for Cleanup of Hazardous and Toxic Waste as published in the Federal Register on February 21, 2012. We do require compliance with the enclosed Terms, General, and Regional Conditions of the NWP.

However, since the IDEM has denied the required Section 401 CWA Water Quality Certification (WQC) for NWP 38, you must apply for and obtain an individual WQC for this project from the IDEM. The responsibility for obtaining the state WQC rests with the applicant. You may contact IDEM as follows:

IDEM-OWQ (Groce)
Section 401 WQC Program
100 North Senate Avenue
Indianapolis, IN 46204
Telephone: 317-234-6233

Once you obtain your WQC from IDEM and furnish a copy to us, you are authorized under this NWP and may proceed without further contact or verification from us. If IDEM issues an individual WQC, you must comply with any conditions imposed in the WQC as it is part of your NWP authorization.

This verification is valid until March 18, 2017. The enclosed Compliance Certification should be signed and returned when the project is completed.

If you have any questions concerning this matter, please contact me by writing to the above address, or by calling 317-543-9424. Any correspondence should reference our assigned Identification Number LRL-2012-107-1c1.

Sincerely,

A handwritten signature in black ink, appearing to read "Laban C. Lindley". The signature is fluid and cursive, with the first name "Laban" being more prominent.

Laban C. Lindley
Team Leader
Indianapolis Regulatory Office

Enclosures

Copy Furnished: IDEM (Groce)
Advanced GeoServices (Stratman)

Compliance Certification

Permit Number: LRL-2012-107-1c1

Name of Permittee: Refined Metals Corporation
c/o Exide Technologies

Agent: Advanced GeoServices

Date of Issuance: May 9, 2013

Upon completion of the activity authorized by this permit and any mitigation required by this permit, sign this certification and return it to the following address:

USACE - Louisville District
Indianapolis Regulatory Office
8902 Otis Avenue, Suite 5106B
Indianapolis, IN 46216-1055

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature for Permittee
(Matt Love)

Date

Terms for Nationwide Permit No. 38
Cleanup of Hazardous and Toxic Waste

Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

Note: Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.



US Army Corps
of Engineers.
Louisville District

Nationwide Permit Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the US.

(c) The permittee understands and agrees that, if future operations by the US require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the US. No claim shall be made against the US on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the US that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high

tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the US during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, US Forest Service, US Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps.

(d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the US to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA is complete.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who,

with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the US, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the US, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the US are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has

been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a PCN as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the US expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the US. The 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of PCN Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require PCN notification and result in the loss of greater than 1/2-acre of waters of the US, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require PCN notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require PCN notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the PCN notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each PCN notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

INDIANA REGIONAL GENERAL CONDITIONS FOR THE STATE OF INDIANA

These regional conditions are in addition to but do not supersede the requirements in the Federal Register (Volume 77 No. 34 of February 21, 2012). Information on Pre-Construction Notification (PCN) can be found at NWP General Condition No. 31 (Federal Register, Volume 77, No. 34, Tuesday, February 21, 2012, pp 10286).

The following Nationwide Permits in the State of Indiana have been suspended:

NWP 7 Outfall Structures and Associated Intake Structures
NWP 11 Temporary Recreational Structures
NWP 13 Bank Stabilization
NWP 14 Linear Transportation Projects
NWP 15 U.S. Coast Guard Approved Bridges
NWP 18 Minor Discharges
NWP 19 Minor Dredging
NWP 25 Structural Discharges
NWP 29 Residential Developments
NWP 36 Boat Ramps
NWP 39 Commercial and Institutional Developments
NWP 40 Agricultural Activities
NWP 41 Reshaping Existing Drainage Ditches
NWP 42 Recreational Facilities
NWP 43 Stormwater Management Facilities
NWP 44 Mining Activities

REGIONAL CONDITIONS:

1. Nationwide Permit No. 12 – Utility Line Activities

- (a) Notification is required for all substations.
- (b) Impacted wetlands outside of permanently maintained rights of way shall be restored to the same or more valuable wetland type (e.g. forested wetlands shall be restored to forested wetlands). Within permanently maintained rights of way, impacted wetlands shall be restored, unless otherwise authorized by the Corps.
- (c) For utility lines placed across the channel of an authorized Federal navigation project, the following conditions apply: 1) the line must be embedded at least 6 feet below the authorized Federal channel depth; 2) existing and proposed elevation information on precise plan and section scale drawings are required; 3) within 60 days after construction, an as-built survey must be provided indicating the points of entry and exit of the installation.
- (d) Notification is required for all stream crossings.

Regional Conditions Applicable to all NWPs within Indiana:

- 1. Excavation/dredging from areas of known or suspected contamination requires:
 - (a) Placement of the material in a Confined Disposal Facility or Class II landfill; or
 - (b) Placement of the material by other Corps' approved method; or
 - (c) Testing to demonstrate that the material is not contaminated. If the material is determined to be contaminated, it must be disposed of in a. or b. above.
- 2. Notification in accordance with Condition 31 is required to the Corps for all activities affecting Designated Salmonid Waters, Outstanding State Resource Waters, Exceptional Use Streams, and Critical Wetlands and Critical Special Aquatic Sites (See Attachments 1 and 2).
- 3. Notification in accordance with Condition 31 is required to the Corps for all activities which would cause, alter, or affect diversion of water from the Great Lakes basin.

ATTACHMENT 1

Designated Salmonid Waters

1. Galena River and its tributaries, LaPorte County
2. Trail Creek & tributaries downstream to Lake Michigan, LaPorte County.
3. East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Waterway (Ditch), Porter and LaPorte Counties.
4. The Indiana portion of the open waters of Lake Michigan.
5. Kintzele Ditch (Black Ditch) from Beverly Drive downstream to Lake Michigan, Porter County.
6. Salt Creek and its tributaries upstream of its confluence with the Little Calumet River, Porter County.
7. The St. Joseph River and its tributaries in St. Joseph County from the Twin Branch Dam in Mishawaka downstream to the Indiana/Michigan state line, St. Joseph County.
8. Those waters designated by the Indiana Department of Natural Resources (IDNR) for put-and-take trout fishing.

Waterbodies which have been designated all or partially as Outstanding State Resource Waters:

1. The Blue River in Washington, Crawford, and Harrison counties (from the confluence of the West and Middle Forks of the Blue River in Washington County) from river mile 57.0 to river mile 11.5.
2. Cedar Creek in Allen and DeKalb counties.
3. The North Fork of Wildcat Creek in Carroll and Tippecanoe counties.
4. The South Fork of Wildcat Creek in Tippecanoe County.
5. The Indiana portion of Lake Michigan.
6. All waters incorporated in the Indiana Dunes National Lakeshore.

Streams which have been designated all or partially as Exceptional Use Waters:

1. Big Pine Creek in Warren County.
2. Mud Pine Creek in Warren County.
3. Fall Creek in Montgomery County.
4. Indian Creek in Montgomery County.
5. Clifty Creek in Montgomery County.
6. Bear Creek in Fountain County.
7. Rattlesnake Creek in Fountain County.
8. The small tributary to Bear Creek in Fountain County within the Portland Arch Nature Preserve which enters Bear Creek at the sharpest bend and has formed the small natural bridge called Portland Arch.
9. Blue River from the confluence of the West Middle Forks of the Blue River in Washington County to the Ohio River.
10. The South Fork of the Blue River in Washington County.
11. Lost River and all surface and underground tributaries upstream from the Orangeville Rise.
12. Rise of the Lost River
13. Mainstream of the Lost River from Orangeville Rise downstream to its confluence with the East Fork of the White River (Orangeville Rise location)

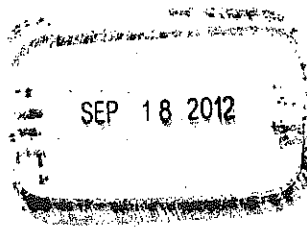
ATTACHMENT 2

Critical Wetlands and Critical Special Aquatic Sites

1. Acid bogs
2. Acid seeps
3. Circumneutral bogs
4. Circumneutral seeps
5. Cypress Swamps
6. Dune and swales
7. Fens
8. Forested fens
9. Forested swamps
10. Marl beaches
11. Muck flats
12. Pannes
13. Sand flats
14. Sedge meadows
15. Shrub swamps
16. Sinkhole ponds
17. Sinkhole swamps
18. Wet floodplain forests
19. Wet prairies
20. Wet sand prairies



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590



REPLY TO THE ATTENTION OF:

LU-9J

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
3000 Montrose Avenue
Reading, PA 19605

Conceptual Containment Design changes
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

Thanks for your August 27, 2012, email with attachment showing conceptual changes to the United States Environmental Protection Agency (EPA) approved Containment Cell design for the Refined Metals Corporation. The containment Cell is referenced in the EPA approved final Corrective Measures Design (CMD). EPA is aware that the proposed changes to the Containment design are necessary to satisfy the Army Corps of Engineers (ACOE) requirement that Refined Metals Corporation minimize disturbance of existing wetlands as a condition necessary for securing Section 404 Permits.

Based on our review at this time, no major issues were noted on the conceptual changes to the containment cell, storm water management (SWM) basin and Forebay configuration, pending final detail changes to the conceptual design. However, the following items were noted in the conceptual design:

1. Although the size of the proposed containment cell is slightly smaller than the original CMD as long as the contingency remains that any excess material will be disposed of off-site, this does not appear to be an issue.
2. It is noted that only (5) monitoring wells are shown on the conceptual drawing. The original CMD proposed (6) monitoring wells. In addition, one of the new proposed locations appears to be very close to the location of the existing monitoring well MW-8. MW-8 was proposed to be part of

the Monitored Natural Attenuation (MNA) monitoring well network in the original CMD. It appears that additional wells east and southeast of the proposed containment cell may be necessary.

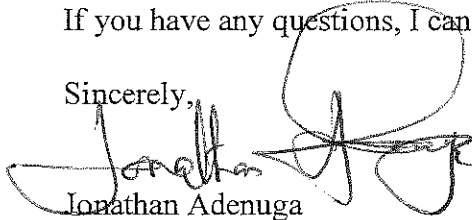
3. The proposed western-most Forebay appears to be in close vicinity to the existing monitoring well MW-2, which was also proposed in the original CMD to be part of the MNA monitoring wells network. It is not clear if construction of this Forebay would entail replacement of monitoring well MW-2.

4. It appears also that the ACOE has made some changes to the conceptual design. The ACOE changes should also be addressed.

Finally, EPA is aware that the conceptual design changes were submitted for discussion purpose; however, EPA will not approve this submittal in its current state. We suggest that you address EPA's comments and continue to work with ACOE and Indiana Department of Environmental Management for proper revision(s) of the Containment Cell design as it affects wetland issues.

If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jonathan Adenuga', is written over a circular stamp. The signature is fluid and cursive.

Jonathan Adenuga
Corrective Action Section 2
Land and Chemicals Division

cc: Ruth Jean, IDEM

CORRECTIVE MEASURES IMPLEMENTATION REFINED METALS CORPORATION

Meeting Minutes

July 26, 2012

1:15 -2:45

Purpose: Review and discuss water quality certification (Section 401) and wetlands disturbance/filling (Section 404) permitting requirements and timeframes associated with proposed Site remediation.

Participants: Matthew Love (Exide/RMC), Laban Lindley (ACOE), Jonathan Adenuga (USEPA (via telephone)), Samantha Groce (IDEM), Paul Stratman (AGC)

The following summarizes discussions from the meeting:

- L. Lindley stated that the Jurisdictional Determination (JD) has been approved by Louisville and that it is being reviewed by IDEM. He expects that the completed JD will be finalized in the next 2 weeks.
- P. Stratman provided a very brief review of project background for the benefit of S Groce and L. Lindley.
- Based on the final revised wetlands mapping completed by Keramida in May 2012 and included in the JD, the wetlands situated in the portion of the RMC Beech Grove Site west of the railroad spur and north of the former manufacturing areas of the site are 0.49 acres (see attached figure). The wetlands are hydraulically connected to the drainage ditch along the railroad spur. The drainage ditch is connected to the non-navigable Water of the U.S. Beech Creek, which is a tributary to Lick Creek. Therefore, the wetlands and the ditches are U.S. Waters regulated by the Army Corps of Engineers (ACOE) under the Clean Water Act.
- Keramida has identified 0.2 acres of State Isolated wetlands regulated by IDEM immediately south east of the railroad spur and 0.01 acres of federally regulated wetlands northeast of the railroad spur.
- The current Corrective Measures Design (CMD) includes the filling/disturbance of all of the 0.49 acres of federally regulated wetlands west of the railroad spur and remediation of approximately 1,500 lineal feet of drainage ditch (this includes the ditch along the railroad spur and railroad tracks). In addition, approximately 0.1 acres of State Isolated Wetlands are proposed to be disturbed by remediation and restoration.
- Mitigation ratio for areas of permanent disturbance is typically between 3:1 (ACOE) and 4:1 (IDEM). Current design does not provide sufficient area to perform on-site mitigation at

anticipated ratios. Encroachment must be minimized to reduce required amount of mitigation and provide space for mitigation.

- Storm water drainage features (including wetlands within the storm water basin) cannot be counted towards mitigation.
- We are required to obtain the following permits for wetlands and water quality:
 - **Site Specific Individual Section 401 Water Quality Certification (WQC)** from IDEM (because the cumulative impacted area is >0.10 acres);
 - **Nationwide Permit 38** (from ACOE) for Section 404 discharge of dredged or fill material into Water of the United States; and
 - **IDEM Isolated Wetlands General Permit** for discharge of dredged or fill material into state isolated wetlands.
 - Remediation of the drainage ditches along the railroad tracks does not meet the ACOE exemption for Maintenance of Drainage Ditches under Section 404 of the Clean Water Act. But if we modify the restoration of the drainage ditch to eliminate the rip-rap channel lining and utilize a soft/natural restoration (such as vegetation with periodic check dams) then the work can be included as an element of the NP-38 permit.
- Issuance of the Section 401 and Section 404 permits require that any activities involving the disturbance or filling of wetlands first be subject to avoidance and minimization to the maximum extent practicable. NP-38 and WQC must include a written report regarding how the design avoids and minimizes wetlands encroachment. Discussions ensued about rotating the containment cell to reduce the amount of wetlands disturbed. It was also agreed that there would be benefits to removing the mounds of dredged material between the wetlands and ditch along the west side of the rail spur to integrate these two areas.
- L. Lindley stated that the Hickory Trees in the wooded areas are also preferred habitat for the Indiana Bat, an endangered species, that must be avoided and that clearing can only be completed between the months of October 1 and March 31. The contact for more information about the Indiana Bat is Mike Litwin at the US Fish & Wildlife Service, in the Bloomington Field Office. Documentation regarding presence or absence of endangered species or protected habitat must be provided with the NP-38 submission.

The required activities and estimated time frame to proceed with permitting as developed during the meeting and during a subsequent conference call with Jonathan Adenuga will be:

- Prepare conceptual sketch showing anticipated changes to the design for review by USEPA and USEPA's contractor. Est. 1 week.

- Prepare preliminary design modifications for informal review and discussions with USEPA and USEPA's contractor. Also provide copies of preliminary design modification to ACOE and IDEM for initial input and recommendation. Est. 2 weeks.
- Finalize modifications to the CMD to reduce amount of wetlands impact. Est. 4 weeks.
- USEPA review of CMS Design modifications. Est. 2 to 4 weeks
- Finalize CMD modifications based on USEPA comments. Est. 2 weeks.
- Prepare NP-38 and Individual WQC applications coincident with CMD finalization, plus 2 weeks. Submit both applications simultaneously.
- ***Site Specific Individual Section 401 Water Quality Certification*** approx. 90 days for review.
- ***Section 404 Permits - Nationwide Permit 38*** – 60 to 90 days (concurrent with 401 review)
- ***IDEM Isolated Wetlands General Permit*** (specific to state isolated wetlands only) 30 days. Can be completed concurrent with WQC.
- ***City of Indy Drainage Permit revision*** - Storm water design and management are dictated by the City of Indianapolis so the design modification relative to storm water will be require review and re-issuance of the Storm Drainage permit by the City.

Based on the estimated timeframes shown above approximately 5 months will be required to modify the design and complete the Section 401 and 404 permitting.

847-304-2349



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

October 18, 2012

Mr. Matt Love
Director – Global Environmental Remediation
Exide Technologies
P.O. Box 14294
Reading, PA 19612-4294

Dear Mr. Love:

Re: Monitoring Well Inspection
October 5, 2012
Refined Metals Corporation
Marion County
EPA ID # IND000718130

On October 5, 2012, Mr. Marty Harmless of my staff inspected the ground water monitoring wells located at Refined Metals Corporation (RMC). A facility representative did not accompany Mr. Harmless during the well inspection. The purpose of a monitoring well inspection is to evaluate the maintenance and integrity of monitoring well components observable at the wellhead. Proper maintenance is essential for collecting representative samples and determining static water level elevations.

Our Well Inspection Sheets and monitoring well photographs record the condition of each monitoring well. You can view the Well Inspection Sheets, Verification of Inspection Sheet, and photographs that document our findings at <http://vfc.idem.IN.gov>. The VFC number for this documentation is 66968384.

At the conclusion of the well inspection, Mr. Harmless reviewed the findings and condition of the monitoring wells. The following well improvements are necessary to maintain the monitoring wells and comply with 329 IAC 3.1-10 and 40 CFR 265.

- Well identification labels are faded or not present on all wells. To ensure that data collected for a particular well are correctly associated with the well, please label the outside protective casings on all wells.
- Weep holes are not present on any of the wells. To ensure that water will drain from the space between the inner well casings and the outside protective casings, please install weep holes through the bases of the outside protective casings at all wells.

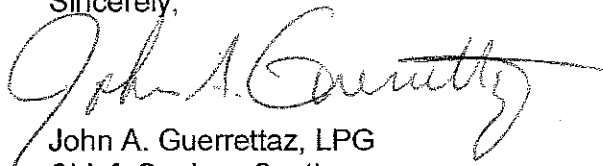
Mr. Matt Love
Page 2

- Surface pad and outer protective casing at MW-5 show signs of subsidence. Please install a new concrete surface pad and outer protective casing at MW-5 to prevent surface water runoff from entering the well annulus, hold the protective casing in place, and protect the well from accidental damage or vandalism. We recommend that you install the new concrete pad on top of the grout seal in a continuous pour with the bottom extending below the ground surface.

Please submit documentation of the improvements within 60 days of receipt of this letter. If you require additional time to complete the improvements, contact Mr. Harmless to determine a mutually agreeable period. We ask that you provide notice to Mr. Harmless 10 days before making improvements.

Thank you for assisting us with the inspection. If you have questions, please contact Mr. Harmless at mharmles@idem.IN.gov or call (317) 234-0597.

Sincerely,



John A. Guerrettaz, LPG
Chief, Geology Section
Permits Branch
Office of Land Quality

cc: Marion County Health Department
Paul Stratman, Advance Geoservices
Ruth Jean, OLQ
Marty Harmless, OLQ



1055 Andrew Drive, Suite A
West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

July 5, 2012

2003-1046-18

VIA FEDERAL EXPRESS

Mr. Laban Lindley
U.S. Army Corps of Engineers
Indianapolis Field Office
9799 Billings Road
Indianapolis, IN 46216

RE: Request for a Jurisdictional Determination
Former Refined Metals Facility
3700 South Arlington Avenue
Beech Grove, Indiana
Corps ID No. LRL-2012-107 lcl

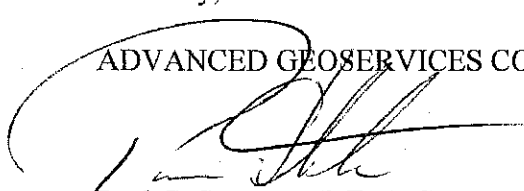
Dear Mr. Lindley:

Attached please find two hard copies and one electronic copy of the revised Wetlands Delineation Report prepared by Keramida Environmental, Inc. (dated July 3, 2012) for the above-referenced facility. This revised Wetlands Delineation Report includes soils information and photographs as requested. We believe this provides the additional information required for completion of the Jurisdictional Determination.

If you have any questions, please contact me at 601-840-9122. We appreciate your efforts to help expedite this process.

Sincerely,

ADVANCED GEOSERVICES CORP.



Paul G. Stratman, P.E., P.G.
Senior Project Consultant

PGS:vm

Enclosures

cc: Matthew Love, Exide (one hard copy)



401 North College Avenue
Indianapolis, Indiana 46202
(317) 685-6600 • Fax (317) 685-6610
1-800-508-8034

keramida@keramida.com • www.keramida.com

July 3, 2012

Mr. Paul Stratman
Advanced GeoServices
1055 Andrew Drive
West Chester, PA 19380

Re: Wetland Delineation Report
Former Refined Metals Property
3700 S. Arlington Avenue
Beech Grove, Marion County, Indiana
KERAMIDA Project No. 14908

Dear Mr. Stratman,

KERAMIDA Environmental, Inc. (KERAMIDA) is pleased to submit this report of findings for the wetland delineation at the above-referenced Site. The Site, comprising approximately 24 acres of land, is located at the former Refined Metals property, at 3700 S. Arlington Avenue, Beech Grove, Marion County, Indiana. The purpose of the delineation was to establish the boundaries of wetland areas that were identified at the Site in previous investigations. The delineations were conducted in two separate field events and focused on two separate areas of the Site. The delineation events are discussed further below. It should be noted that the wetland in Area 1 was fully delineated in July 2011 and previously reported to and approved by the U.S. Army Corps of Engineers (USACE). The discussion of Area 1 is included in this document for reference purposes and to provide a single complete report for submittal to USACE. The wetlands in Area 2 were delineated in April 2012.

METHODOLOGY AND FINDINGS

Area 1

KERAMIDA identified a wetland area during a previous wetland determination field survey, documented in a Wetland Determination Report dated June 27, 2011 (June 2011 Wetland Determination). The wetland identified during the wetland determination was in a wooded/grassy boundary area near the northeastern portion of the Site (refer to Figure 1). This location is hereinafter referred to as Area 1.

KERAMIDA conducted a Site visit on July 14, 2011 to collect data points from Area 1 to determine the boundaries of the wetland with respect to the Site. As observed at the time of the field work, the wetland in Area 1 exhibited hydric soil and hydrologic wetland indicators. The sampling area was slightly concave with water marks apparent on nearby vegetation, indicating that water had once stood in the area. However, very little active vegetation growth was observed within the wetland. As discussed in the June 2011 Wetland Determination, a review of aerial photographs and satellite imagery indicated that the area is inundated during part of the

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year. This evidence suggested that hydrophytic vegetation would most likely grow in the area given the proper conditions and, therefore, the area is a wetland. Delineation of this wetland, given the absence of significant vegetation growth, was based primarily on the presence of hydric soil and hydrologic indicators

Sampling points were selected from the grassy lawn south of the wetland, from within the wetland itself, and from the wooded area bordering the northern portion of the wetland (refer to Figure 2a for sampling point locations). Each sampling point was analyzed for the presence of hydric soils, wetland hydrology and hydrophytic vegetation. The observations at each sampling point were recorded on Field Data Forms, which are enclosed herein.

Based on the visual characteristics of the wetland, and verified through the data collected from the sampling points, stakes and survey flags were placed around the boundaries of the wet prairie-type wetland (see Figure 3a). Measurements based off of the staked boundaries yielded a calculated area for the wetland of approximately 0.2 acre.

Area 2

During the USACE Jurisdictional Determination (JD) process, additional suspect wetlands were identified. The suspect wetlands were situated in a wooded area on the northern portion of the Site (refer to Figure 1). This location is hereinafter referred to as Area 2.

KERAMIDA conducted Site visits on April 23, 26, and 27, 2012 to collect data points from within Area 2 to determine the boundaries of the wetlands with respect to the Site. As observed at the time of the field work, Area 2 is a heavily wooded area characterized by varied topography, containing hummocks and small hills, as well as low-lying, partially inundated areas. A historic rail siding runs through Area 2, with ditches present on either side of the former rail siding. The wetlands identified during the USACE JD process are generally located adjacent to the ditches.

The low-lying, partially inundated portions of Area 2, generally located adjacent to the rail siding ditches, exhibited hydrophytic vegetation, hydric soil, and hydrologic wetland indicators, meaning that they would be classified as wetlands. The purpose of KERAMIDA's field activities was to delineate these wetlands within Area 2. Due to the generally homogeneous soil conditions and prevalence of several wetland indicator plants throughout Area 2, delineation of these wetlands was based primarily on the presence of hydrologic indicators and variations in surface topography.

Sampling points were selected from within Area 2 (refer to Figure 2b for sampling point locations). Each sampling point was analyzed for the presence of hydric soils, wetland hydrology and hydrophytic vegetation. The observations at each sampling point were recorded on Field Data Forms, which are enclosed herein.

Based on the visual characteristics of the wetlands observed in Area 2, and verified through the data collected from the sampling points, stakes and survey flags were placed around the boundaries of three floodplain forest-type wetlands (see Figure 3b). Measurements based off of the staked boundaries yielded a total calculated area for the three wetlands of approximately 0.51

acre. The individual wetland areas (two on the west side of the rail siding, and one located near the northeast corner of the Site) are estimated at: 0.33 acre, 0.16 acre, and 0.11 acre, respectively.

Representative photographs of the respective wetland areas are attached to this document. Also included is a USDA soils map of the overall property (Figure 5).

CONCLUSIONS

Area 1

The closest Water of the U.S. relative to Area 1 is Sloan Ditch, located approximately 1,100 feet southeast. No connection to this or any other Water of the U.S. was found during the delineation or map review. Refer to Figure 4 (topographic map) for the location of Sloan Ditch relative to Area 1. Delineation of the wetland indicated the area is approximately 0.2 acre in size, with no identified connection to a Water of the U.S. Because the wetland does not abut or adjoin a Water of the U.S., it would be considered an isolated wetland, likely classified as a Class I or Class II wetland, as defined in Indiana Code 13-11-2-25.8.

Area 2

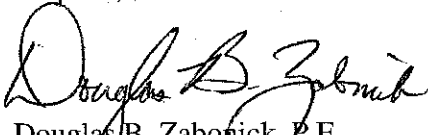
The wetlands in Area 2 are located generally adjacent to the ditches that run alongside a former rail spur on the property. The ditches are connected to the non-navigable Water of the U.S. Beech Creek, which is a tributary of Lick Creek. Because of the connection to a Water of the U.S., the ditches, and therefore the adjacent wetland areas, fall under the jurisdiction of USACE. It is anticipated that USACE permitting requirements will apply if the wetlands are to be disturbed.

If you have any questions concerning this information, please contact Colin Keith at (317) 685-6617. Thank you for the opportunity to assist you with this project.

Sincerely,
KERAMIDA Environmental, Inc.

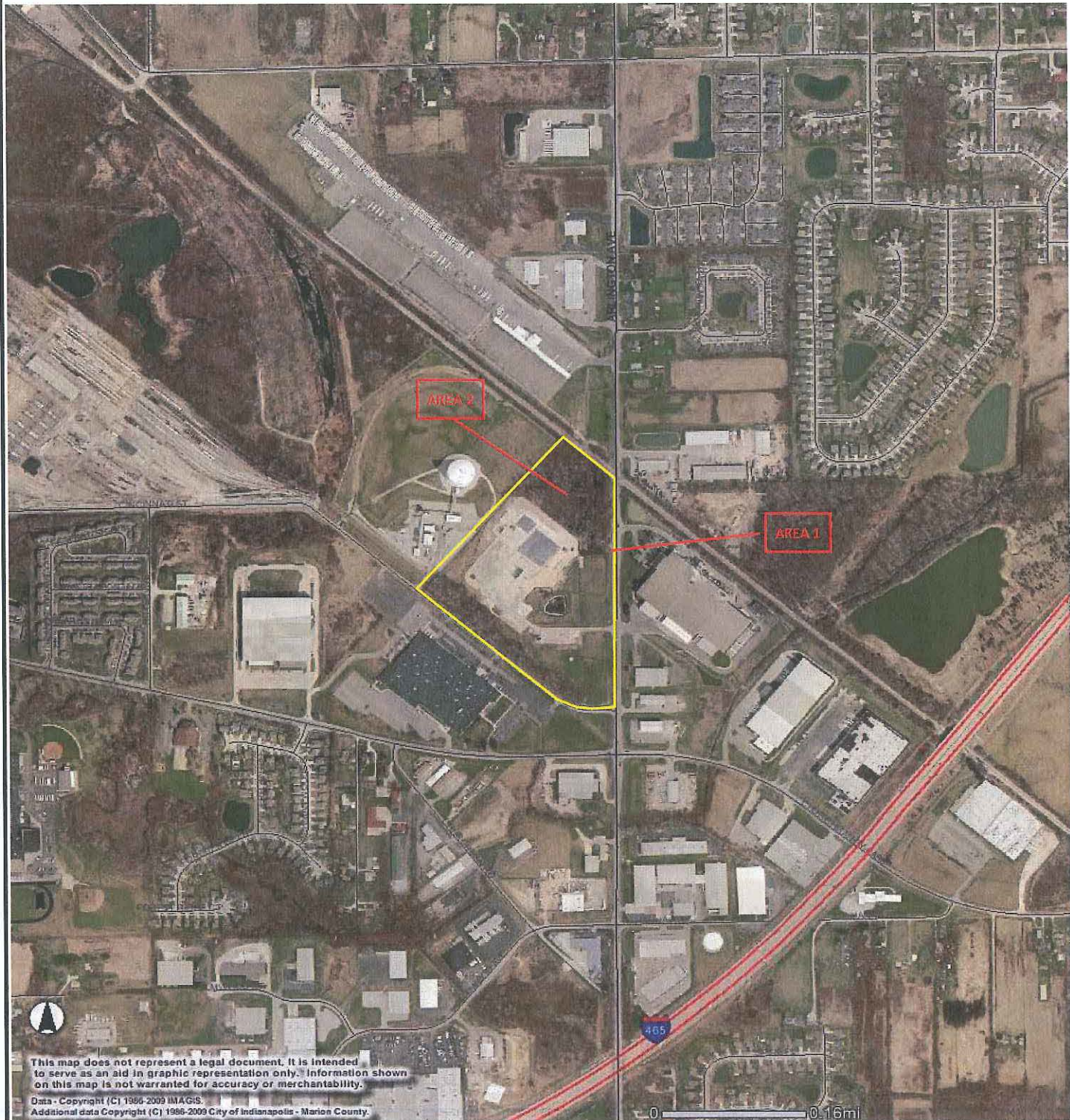


Colin Keith
Project Scientist



Douglas B. Zabonick, P.E.
President

Enclosures



Legend

Approximate Site Boundary: ———

Image Source: IMAGIS, 2010 Aerial



Figure 1
Site Map
 Former Refined Metals Property
 3700 South Arlington Avenue
 Beech Grove, Indiana

Prepared by: CK
 Approved by: CH
 Date: 5/22/12
 Scale: as noted
 KEI Number: 14908





Legend

Wetland Data Point:

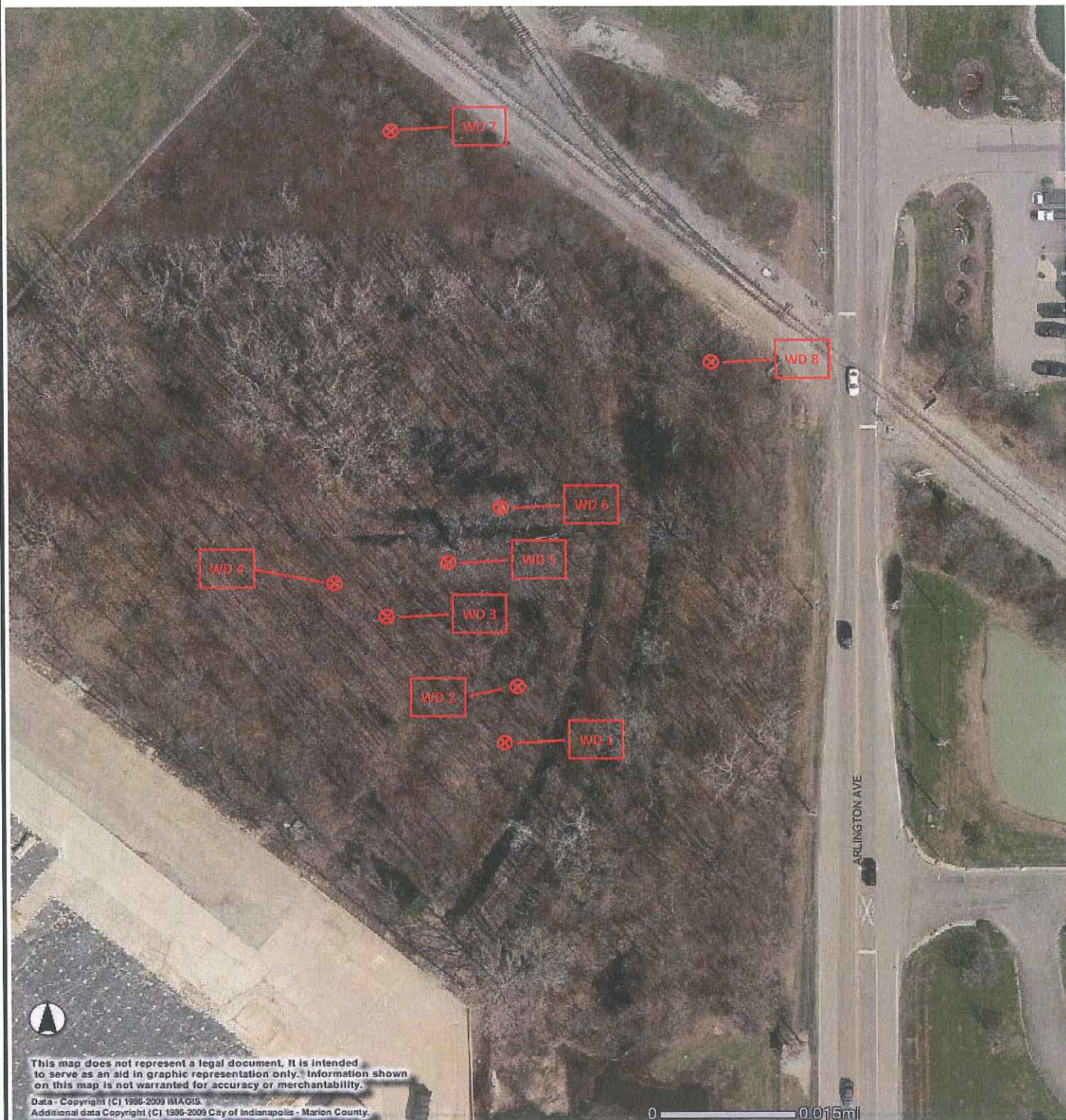
Image Source: IMAGIS, 2010 Aerial



Figure 2a
Sampling Point Location Map - Area 1
Former Refined Metals Property
3700 South Arlington Avenue
Beech Grove, Indiana

Prepared by: CK
Approved by: CH
Date: 5/22/12
Scale: as noted
KEI Number: 14908





Legend

Wetland Data Point:

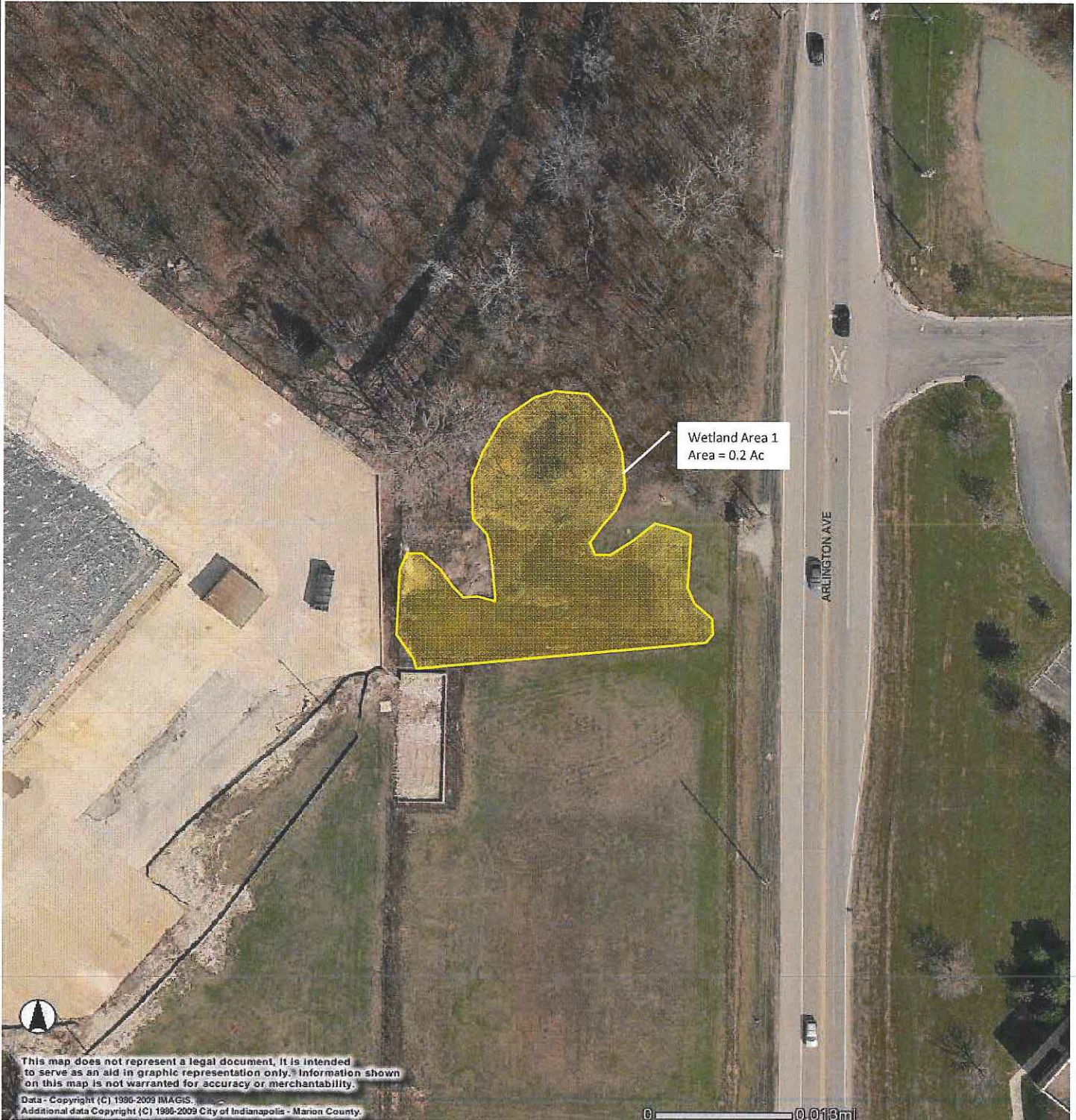
Image Source: IMAGIS, 2010 Aerial



Figure 2b
Sampling Point Location Map - Area 2
Former Refined Metals Property
3700 South Arlington Avenue
Beech Grove, Indiana

Prepared by: CK
Approved by: CH
Date: 5/22/12
Scale: as noted
KEI Number: 14908





Legend

Approximate Wetland Boundary: ———

Image Source: IMAGIS, 2010 Aerial

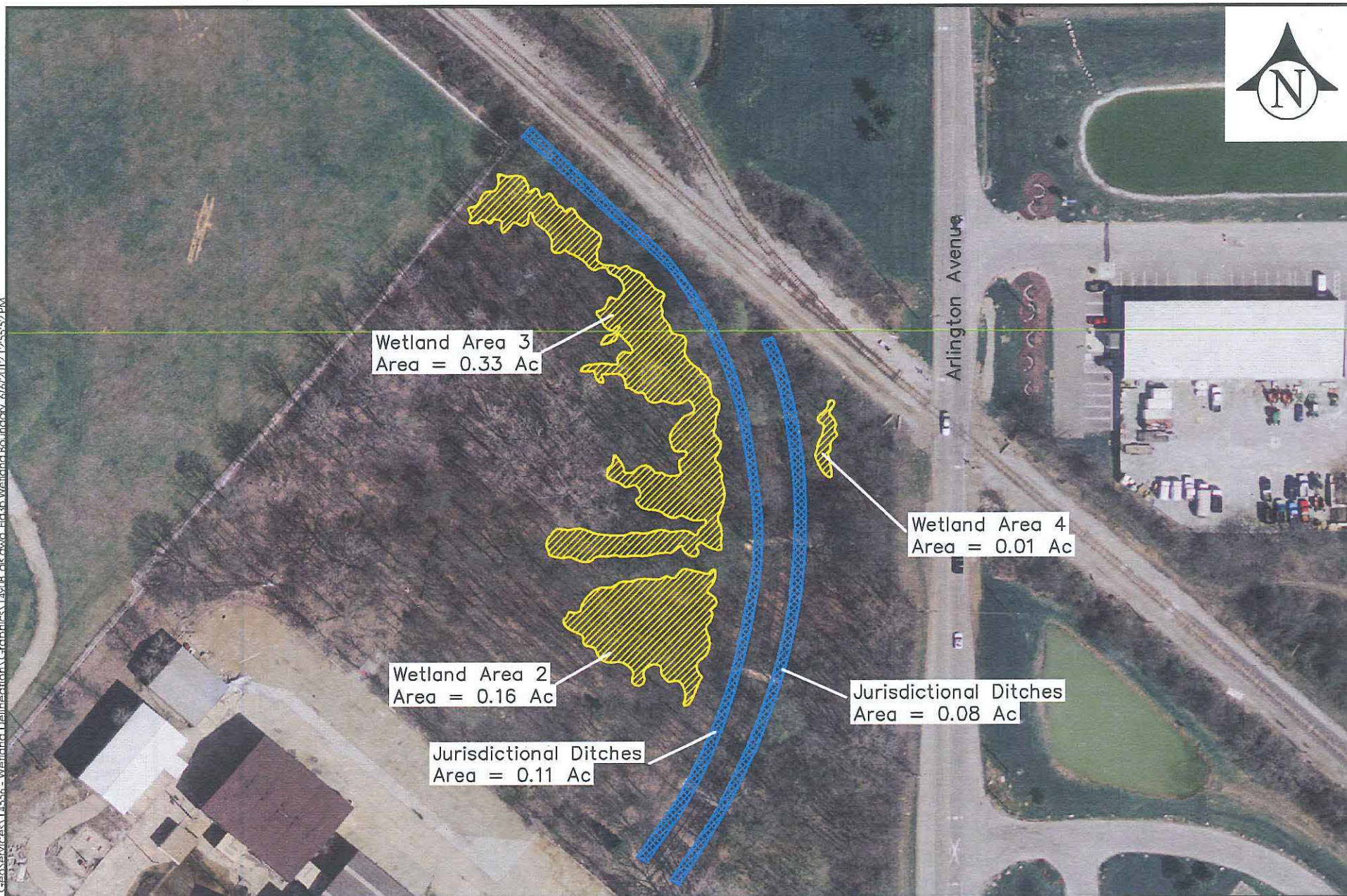


Figure 3a
Wetland Boundary Map - Area 1
Former Refined Metals Property
3700 South Arlington Avenue
Beech Grove, Indiana

Prepared by: **CK**
Approved by: **CH**
Date: 5/22/12
Scale: as noted
KEI Number: 14908



C:\CLIENTS\Advanced_GeoServices\14554-Wetland Delineation\Graphics\14908_nis_dwn_Eig3b_Wetland Boundary 4/6/2012 12:55:52 PM



SCALE:
0 50' 100'



KERAMIDA
Global EHS & Sustainability Services

Project: Former Refined Metals
3700 South Arlington Avenue
Beech Grove, Indiana

Project Number: 14908
Date: May 22, 2012

Drawn By: J. DuMond
Approved By: CK
File No. 14908_gis

Figure 3b

Wetland Boundary Map
Area 2

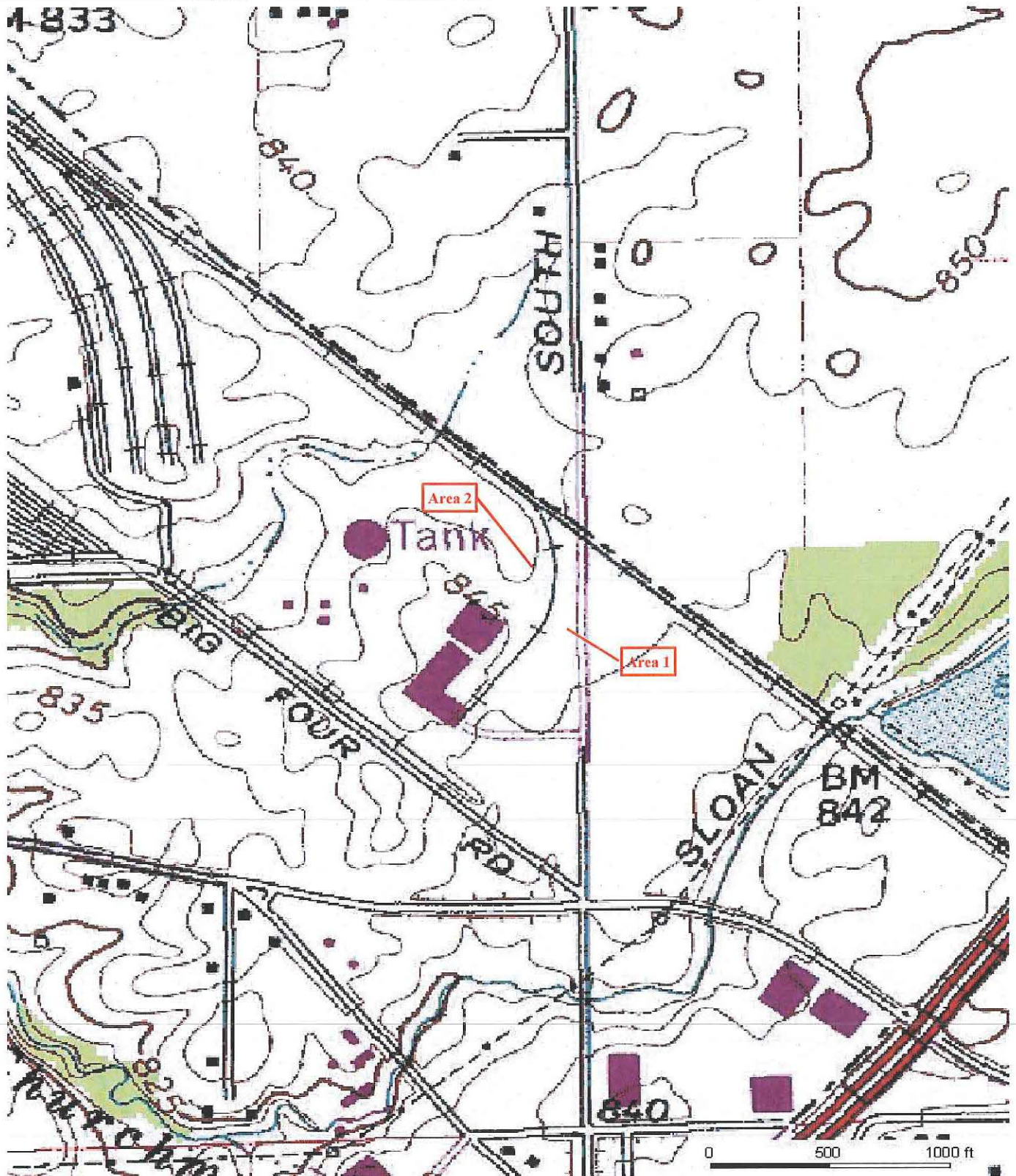
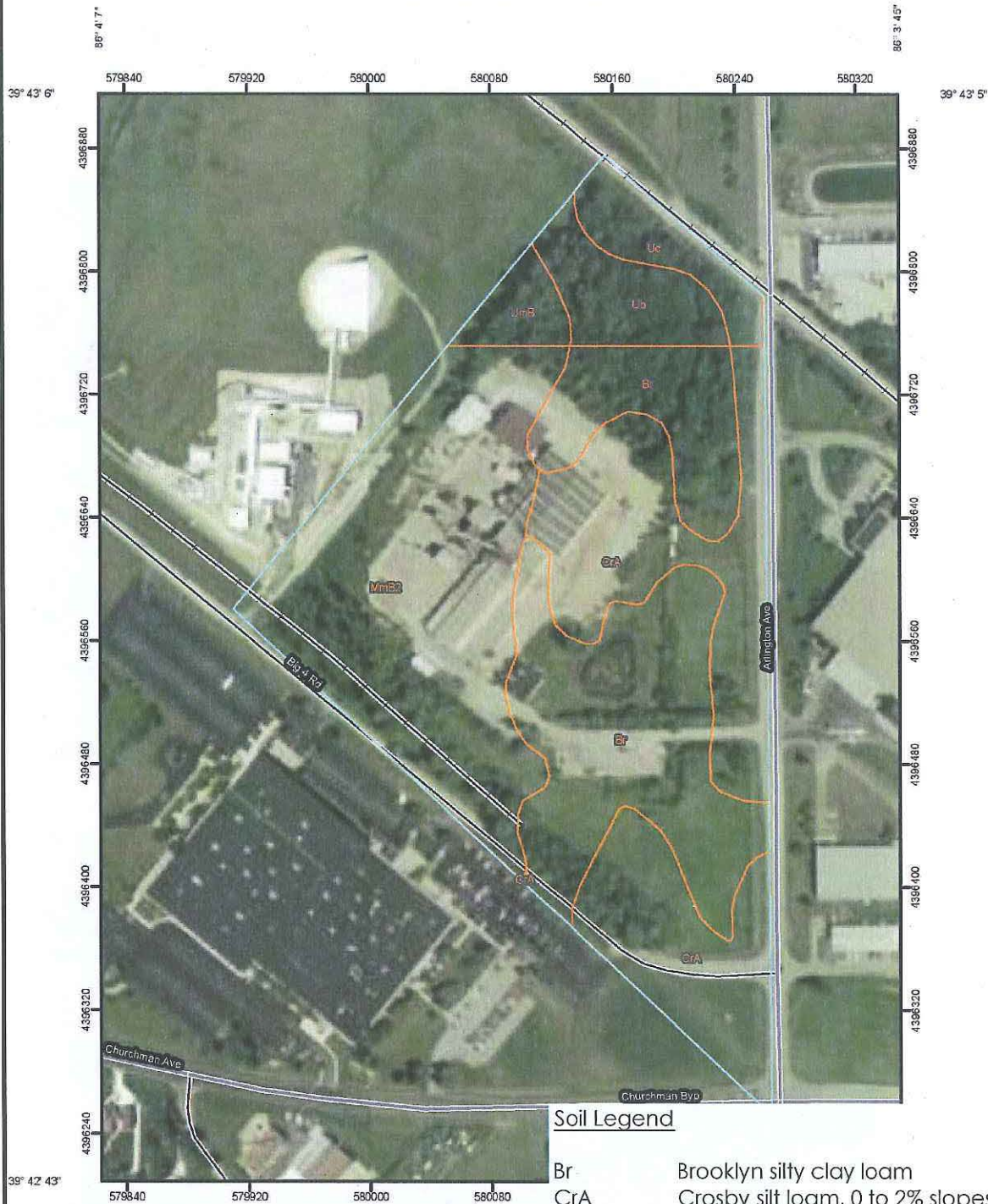


Image Source: Indiana Map



Soil Map—Marion County, Indiana
(The Refined Metals Corp - Soils)



Soil Legend

Br	Brooklyn silty clay loam
CrA	Crosby silt loam, 0 to 2% slopes
MmB2	Miami Silt Loam, 2 to 6% slopes, eroded
Ub	Urban land-Brookston complex
Uc	Urban land-Crosby complex
UmB	Urban land-Miami complex, 0 to 6% slopes

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

6/13/2011
Page 1 of 3



Project: Former Refined Metals
3700 South Arlington Avenue
Beech Grove, Indiana

Figure 5

Soil Map

	Drawn By: J. DuMond
Project Number: 14908	Approved By: 14908
Date: June 27, 2012	File No. 14908_soil

Photo Date:	Project:	Project #
July 2, 2012	Former Refined Metals Property	14908

Photo #1

Wetland in Area 1.



Photo #2

Wetland 1 in Area 2.



Photo Date:	Project:	Project #
July 2, 2012	Former Refined Metals Property	14908

Photo #3

Wetland 2 in Area 2.



Photo #4

Wetland 3 in Area 2.



WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-1
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): Slight Concave
 Slope (%): 0 Lat: 39.71655 Long: 86.064325 Datum: WGS84
 Soil Map Unit Name Brookston silty clay loam VWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances"

Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present?	<u>Y</u>	
Wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
		<u>20</u>	= Total Cover	
Sapling/Shrub stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Acer negundo</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2	<u>Lonicera morrowii</u>	_____	_____	<u>NI</u>
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
		<u>20</u>	= Total Cover	
Herb stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Lonicera morrowii</u>	_____	_____	<u>NI</u>
2	<u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
		<u>10</u>	= Total Cover	
Woody vine stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	_____	_____	_____	_____
2	_____	_____	_____	_____
		<u>0</u>	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>40</u>	x 2 =	<u>80</u>
FAC species	<u>10</u>	x 3 =	<u>30</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>50</u>	(A)	<u>110</u> (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/2	80	10 YR 5/6	20	RM	M	SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

 Type: _____
 Depth (inches): _____
Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)
- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

 Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-2
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): Slight Concave
 Slope (%): 0 Lat: 39.716633 Long: 86.064308 Datum: WGS84
 Soil Map Unit Name Brookston silty clay loam VWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances"

Are vegetation , soil , or hydrology naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland Area 2</u>
Hydric soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across all Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1	<u>Fraxinus pennsylvanica</u>	80	Y	FACW	
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		80	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>180</u> x 2 = <u>360</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>180</u> (A) <u>360</u> (B) Prevalence Index = B/A = <u>2.00</u>
Sapling/Shrub stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status	
1	<u>Acer negundo</u>	20	Y	FACW	
2	<u>Lonicera morrowii</u>	<u> </u>	<u> </u>	NI	
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		20	= Total Cover		
Herb stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status	
1	<u>Lonicera morrowii</u>	<u> </u>	<u> </u>	NI	
2	<u>Fraxinus pennsylvanica</u>	80	Y	FACW	Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic vegetation present? <u>Y</u>
8	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
9	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
10	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		80	= Total Cover		
Woody vine stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status	
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
		0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 4/1	90	7.5 YR 5/6	10	RM	M	SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____
Hydric soil present? Y

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☒ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☒ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☒ Depth (inches): _____
 Water table present? Yes ☒ No ☐ Depth (inches): 12
 Saturation present? Yes ☒ No ☐ Depth (inches): _____
 (includes capillary fringe)

 Wetland
 hydrology
 present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-3
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): Slight Concave
 Slope (%): 0 Lat: 39.71675 Long: 86.064581 Datum: WGS84
 Soil Map Unit Name Brookston silty clay loam NWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances"

Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland Area 2</u>
Hydric soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>	60	Y	FACW
2				
3				
4				
5				
		60	= Total Cover	
Sapling/Shrub stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Acer negundo</i>	10	Y	FACW
2	<i>Lonicera morrowii</i>			NI
3	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
4				
5				
		15	= Total Cover	
Herb stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Zizia aurea</i>	95	Y	FAC
2				
3				
4				
5				
6				
7				
8				
9				
10				
		95	= Total Cover	
Woody vine stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Toxicodendron radicans</i> subsp. <i>negundo</i>	5	Y	FAC
2				
		5	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>75</u>	x 2 =	<u>150</u>
FAC species	<u>95</u>	x 3 =	<u>285</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>170</u> (A)		<u>435</u> (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/2	90	7.5 YR 5/6	10	RM	M	SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☒ Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)
- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☒ Depth (inches): _____
 Water table present? Yes ☒ No ☐ Depth (inches): 12
 Saturation present? Yes ☒ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-4
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): None
 Slope (%): 0 Lat: 39.716839 Long: 86.064706 Datum: WGS84
 Soil Map Unit Name Brookston silty clay loam VWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation , soil , or hydrology naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: <u> </u>
Hydric soil present? <u>N</u>	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Carya ovata</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2	<u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>90</u>	<u>= Total Cover</u>	

Sapling/Shrub stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Lonicera morrowii</u>	<u> </u>	<u> </u>	<u>NI</u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>0</u>	<u>= Total Cover</u>	

Herb stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Lonicera morrowii</u>	<u> </u>	<u> </u>	<u>NI</u>
2	<u>Parthenocissus quinquefolia</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>
3	<u>Toxicodendron radicans subsp. negundo</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>	<u> </u>
8	<u> </u>	<u> </u>	<u> </u>	<u> </u>
9	<u> </u>	<u> </u>	<u> </u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>80</u>	<u>= Total Cover</u>	

Woody vine stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>0</u>	<u>= Total Cover</u>	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>20</u>	x 2 =	<u>40</u>
FAC species	<u>80</u>	x 3 =	<u>240</u>
FACU species	<u>70</u>	x 4 =	<u>280</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>170</u>	(A)	<u>560</u> (B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

 Rapid test for hydrophytic vegetation

X Dominance test is >50%

 Prevalence index is ≤3.0*

 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/3	100					SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

 Type: _____
 Depth (inches): _____
Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)

- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-5
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hills/slope, terrace, etc.): Woodland Local relief (concave, convex, none): Slight Convex
 Slope (%): 0 Lat: 39.716872 Long: 86.064478 Datum: WGS84
 Soil Map Unit Name Brookston silty clay loam NWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances"

Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Carya ovata</i>	50	Y	FACU
2				
3				
4				
5				
		50	= Total Cover	

Sapling/Shrub stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Lonicera morrowii</i>			NI
2				
3				
4				
5				
		0	= Total Cover	

Herb stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Lonicera morrowii</i>			NI
2	<i>Parthenocissus quinquefolia</i>	10	Y	FAC
3	<i>Toxicodendron radicans subsp. negundo</i>	10	Y	FAC
4				
5				
6				
7				
8				
9				
10				
		20	= Total Cover	

Woody vine stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u> x 1 =	<u>0</u>
FACW species	<u>0</u> x 2 =	<u>0</u>
FAC species	<u>20</u> x 3 =	<u>60</u>
FACU species	<u>50</u> x 4 =	<u>200</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>70</u> (A)	<u>260</u> (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

X Dominance test is >50%

 Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/3	100					SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils:

- | |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (explain in remarks) |

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

 Type: _____
 Depth (inches): _____
Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- | |
|--|
| <input type="checkbox"/> Surface Water (A1) |
| <input type="checkbox"/> High Water Table (A2) |
| <input type="checkbox"/> Saturation (A3) |
| <input type="checkbox"/> Water Marks (B1) |
| <input type="checkbox"/> Sediment Deposits (B2) |
| <input type="checkbox"/> Drift Deposits (B3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) |
| <input type="checkbox"/> Iron Deposits (B5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Water-Stained Leaves (B9) |

- | |
|---|
| <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- | |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface water present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): _____
Water table present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): _____
Saturation present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): _____

 (includes capillary fringe)
Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-6
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): Convex
 Slope (%): 0 Lat: 39.71675 Long: 86.064581 Datum: WGS84
 Soil Map Unit Name Urban Land-Brookston Complex VWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation , soil , or hydrology naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present?	<u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: <u> </u>
Hydric soil present?	<u>N</u>	
Wetland hydrology present?	<u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		<u>0</u>	= Total Cover	
Sapling/Shrub stratum	(Plot size: <u> </u>)			
1	<u>Acer negundo</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2	<u>Lonicera morrowii</u>			<u>NI</u>
3				
4				
5				
		<u>20</u>	= Total Cover	
Herb stratum	(Plot size: <u> </u>)			
1	<u>Hydrophyllum virginianum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
2	<u>Zizia aurea</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3	<u>Lonicera morrowii</u>			<u>NI</u>
4				
5				
6				
7				
8				
9				
10				
		<u>30</u>	= Total Cover	
Woody vine stratum	(Plot size: <u> </u>)			
1		<u>5</u>	<u>Y</u>	
2				
		<u>5</u>	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>40</u>	x 2 =	<u>80</u>
FAC species	<u>10</u>	x 3 =	<u>30</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>50</u>	(A)	<u>110</u> (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

 Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

 Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 4/6	100					SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)
- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-7
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): None
 Slope (%): 0 Lat: 39.717581 Long: 86.064564 Datum: WGS84
 Soil Map Unit Name Urban Land-Crosby Complex VWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation , soil , or hydrology significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation , soil , or hydrology naturally problematic?

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland Area 3</u>
Hydric soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>30</u>	<u>= Total Cover</u>	

Sapling/Shrub stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2	<u>Acer negundo</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>
3	<u>Lonicera morrowii</u>	<u> </u>	<u> </u>	<u>NI</u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>25</u>	<u>= Total Cover</u>	

Herb stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>	<u> </u>
8	<u> </u>	<u> </u>	<u> </u>	<u> </u>
9	<u> </u>	<u> </u>	<u> </u>	<u> </u>
10	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>5</u>	<u>= Total Cover</u>	

Woody vine stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species	Indicator Status
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>
		<u>0</u>	<u>= Total Cover</u>	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>60</u>	x 2 =	<u>120</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>60</u>	(A)	<u>120</u> (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: WD-7**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/2	95	10 YR 5/6	5	RM	M	SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____
Hydric soil present? Y

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)
- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Former Refined Metals Corp City/County: Beech Grove/Marion Sampling Date: 4/23/12
 Applicant/Owner: Advanced GeoServices State: IN Sampling Point: WD-8
 Investigator(s): Colin Keith, KERAMIDA Section, Township, Range: 27-15N-4E
 Landform (hillslope, terrace, etc.): Woodland Local relief (concave, convex, none): Slight Concave
 Slope (%): 0 Lat: 39.717161 Long: 86.063864 Datum: WGS84
 Soil Map Unit Name Urban Land-Crosby Complex NWI Classification: Not Classified

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)

Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances"

Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland Area 4</u>
Hydric soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>	45	Y	FACW
2				
3				
4				
5				
		45	= Total Cover	

Sapling/Shrub stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Lonicera morrowii</i>			NI
2	<i>Acer negundo</i>	20	Y	FACW
3				
4				
5				
		20	= Total Cover	

Herb stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Woody vine stratum	(Plot size: _____)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
		0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	65	(A)	130 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

X Dominance test is >50%

X Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

Y

Remarks: (Include photo numbers here or on a separate sheet)

September 12, 2011

2003-1046-00

Mr. Jonathan Adenuga
United States Environmental Protection Agency, Region 5
Corrective Action Branch
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Corrective Measures Implementation
Refined Metals Facility
Beech Grove, Indiana
IND 000 718 130

Dear Jonathan:

At the request of Refined Metals Corporation (RMC), I am drafting this letter to document your telephone conversation with Matthew Love regarding Corrective Measures Implementation at the RMC facility in Beech Grove, Indiana. As you discussed with Matt Love, we have reached a point in the calendar where we no longer believe that it is realistic to expect we can complete remediation and restoration activities before the onset of winter. At this time, we still have the following open issues that are preventing or delaying the start of construction:

1. We were required to complete an updated wetland delineation for the site. The delineation was completed in late July/early August and at this time we are awaiting completion of a Jurisdictional Determination by the Army Corps of Engineers to confirm that a small area of isolated wetlands identified in the mowed lawn area near Arlington Avenue is not subject to regulation.
2. We are still awaiting access from the CSX Railroad for remediation of the drainage ditch within their right-of-way at the north end of the RMC property.
3. Final approval of the Drainage Permit from the City of Indianapolis is held up pending approval of an Easement by RMC to the City of Indianapolis.
4. RMC is awaiting final comments and approval from Citizens Gas for excavation and restoration activities to be completed on their property

Instead of starting construction activities in October 2011, shutting down for December through March with a disturbed site and then resuming construction in April 2012, we will be delaying the start of construction until mid-April 2012 with an eye towards completion by July/August 2012. We believe that delaying the start date will allow RMC to fully address the open issues cited above, and allow the site to remain undisturbed through the winter period, and allow work to proceed in more favorable weather conditions.

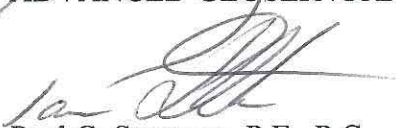


Mr. Jonathan Adenuga
2003-1046-00
September 12, 2011
Page 2 of 2

It is our understanding that you concur with this decision. If you have any questions or comments, please contact Paul Stratman at 610-840-9122 or Matthew Love at 610-921-4054.

Sincerely,

ADVANCED GEOSERVICES CORP.



Paul G. Stratman, P.E., P.G.
Senior Project Consultant

PGS:vm

Enclosures

cc: Ruth Jean
Matthew Love



Refined Metals - Soil from Pipeline Excavation

LOVE, Matt (Reading Equipment Center)

To: Jonathan Adenuga, JEAN, RUTH

Cc: Paul Stratman

06/12/2012 10:49 AM

Jonathan and Ruth,

Per Jonathan's request this morning, I contacted the pipeline company that performed repairs in the drainage ditch in front of the Refined Metals facility and asked what happened to the soil they excavated. The pipeline company said the gas company took it and that's all they knew. The pipeline company said they'd pass my phone number on to the gas company and request that someone from the gas company contact me. I'll let you know what the gas company says when they get back to me.

Matt

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Jonathan Adenuga to: kdaily

07/12/2011 10:13 AM

Hello Kerry, as I mentioned to you recently (7/11/11) that your name came up as the individual who provided comments to the drainage permit submitted for the Refined Metals Corp. located in beech Grove, IN. I also indicated to you that I was going to contact IDEM to inquire whether or not there are other state jurisdictional issues that they might be concerned with. The name of the individual at IDEM involved with storm water issues/permit is Randy Braun whom I have also contacted. If he has not already contacted you, his phone No. is (317) 234-3980. Randy apparently knows you. I would hope that both of you would review any amendments to the permit submitted for all relevant technical details, jurisdictional issues and more importantly, what impacts if any the storm water basin will have on the onsite containment cell that is going to be constructed at the facility. Please keep me posted

Thank you

Jonathan Adenuga

(312) 886-7954



**Refined Metals Beech Grove Storm Water Management Basin and Drainage
Permit from City**

Paul Stratman to: Jonathan Adenuga

Cc: matt.love

07/08/2011 04:01 PM

History: This message has been forwarded.

1 attachment



13-CROSS SECTION PLAN-CROSS SECTION.PDF

Dear Jonathon:

Advanced GeoServices Corp. is in the process of securing the Drainage Permit required by the City of Indianapolis for construction of the proposed Corrective Measures at the Refined Metals Corporation (RMC) facility in Beech Grove, Indiana. The original submission was made on June 7, 2011 and comments were received on June 21, 2011. The majority of the comments were relatively straight forward and can be addressed with no substantive changes to the approved Corrective Measures Design. However, there is one comment that we believe should be discussed with you before we proceed with changes to the design. The comment provided by Mr. Kerry Daily, the technical review for the City (317-266-8000 or kdaily@cbbel-in.com) is as follows

The design of the dry pond should include a low-flow channel with an underdrain to allow the pond to dry out between storm events.

The comment relates to either increasing bottom grading in the SWM Basin to 2% to minimize the potential for standing water or installing the under-drain to facilitate drainage of the basin. Ultimately, the requirement is intended to ensure that the SWM Basin will be sufficiently dry and can be maintained. We have evaluated the feasibility of increasing the bottom slope in the SWM Basin to 2% and the alternative of providing an under-drain. Unfortunately, because of the very flat slopes at the site we do not have enough vertical relief to allow us to provide the under-drain or 2% slopes while also maintaining sufficient **storage capacity** in the SWM Basin necessary for storm water detention.

Under the Stormwater Specifications Manual, we also have the option of utilizing a wet basin. A wet basin recognizes that in some situations an SWM Basin will be difficult to drain due to very flat slope or similar constraints and instead of attempting to create a dry bottom that will be likely wet or soggy the majority of the time, it is designed to retain water on a permanent basis while providing wetland plantings to enhance water quality. Based on our design evaluation we can create a wet basin design in the vicinity of the SWM Basin outlet structure while providing a dry basin configuration between the sediment forebay and the wet basin. As shown on the attached Figure, the wet basin will have a maximum standing water surface elevation of 837.25 and water surface area of approximately 4,300 sf (0.1 acres).

The maximum standing water surface elevation is equal to the invert elevation of the outlet structure from the approved Corrective Measures Design. This means that the vertical separation between the maximum standing water surface elevation and bottom of the

Containment Cell will be 4.25 ft (841.5 – 837.25), which is the same as the separation would have been during high groundwater periods under the approved design, and greater than the vertical separation in the sediment forebay of 3.0 ft (841.5 – 838.5 (forebay overflow pipe invert)). The elevation of the 225 ft long emergency spillway will be 840.25 which means water surface elevation in the basin cannot reach 841.5. The cross-section provided on the attached Figure depicts the relationship between the proposed wet pond and the bottom of the Containment Cell.

As explained above, utilization of the wet pond area in the SWM Basin will not change the relationship between water surface elevations in the SWM Basin and the bottom of waste elevation in the Containment Cell. Through this submission we respectfully request your approval of this design modification for the proposed Corrective Measures at the Refined Metals Beech grove Site.

If you have any questions, please contact me at 610-840-9122. As discussed we are available to participate in a conference call on Modany to discuss further.

Thank you,

Have a good weekend.

Paul G. Stratman,
Senior Project Consultant
Advanced GeoServices

*"Engineering for the Environment. Planning for People."*TM

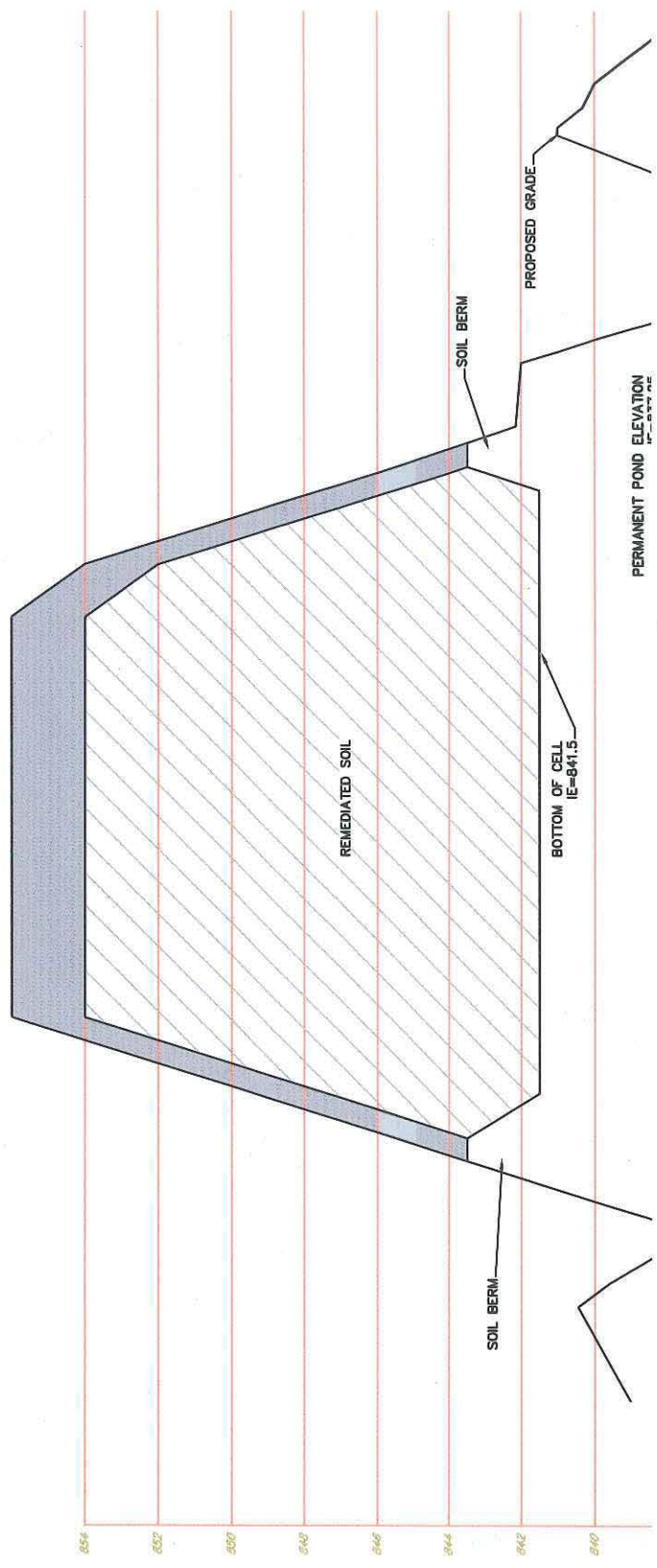
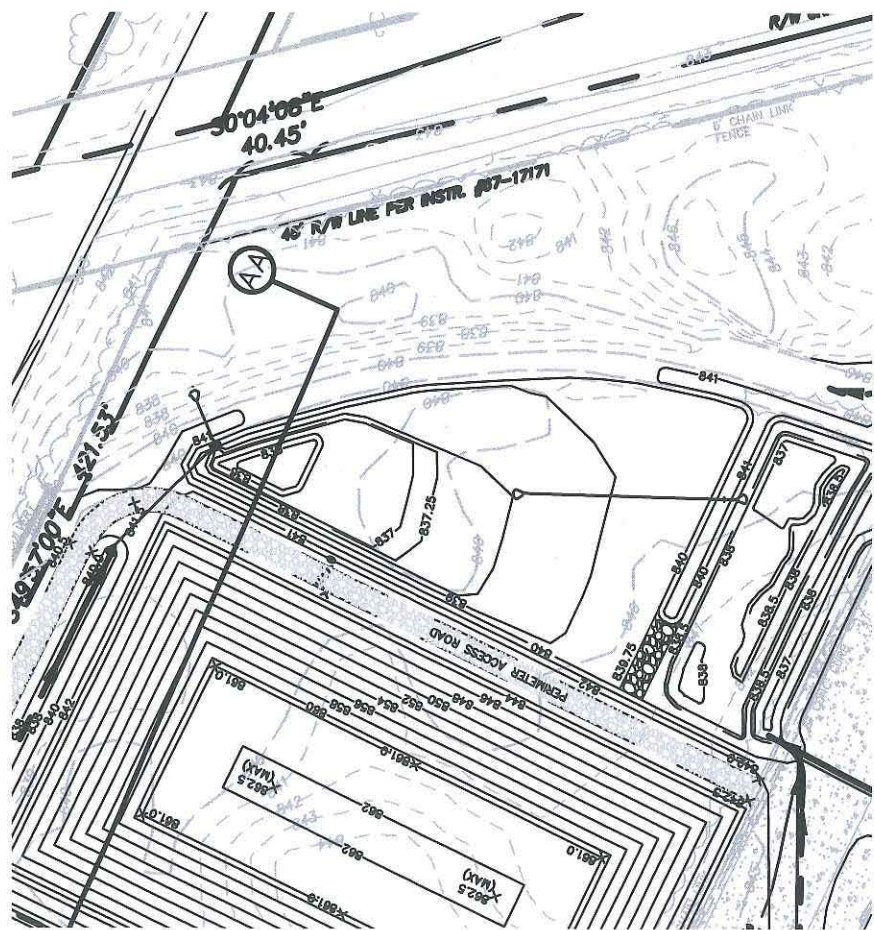
1055 Andrew Drive, Suite A
West Chester, PA 19380-4293

Direct 610.840.9122 **Fax** 610.840.9199

Email pgstratman@advancedgeoservices.com

Web Site <http://www.advancedgeoservices.com>

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10'



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

7/6/2011

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
3000 Montrose Avenue
Reading, PA 19605

REPLY TO THE ATTENTION OF:

Pre-Final Corrective Measures Design Work Plan
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the Response to Comments for the Final Corrective Measure Design (Final CM Design) for the Refined Metals Corporation (RMC) facility located in Beech Grove, Indiana.

On January 4, 2011, EPA provided you with a conditional approval with the hope that RMC would be able to address all of EPA's comments. Also on May 3, 2011, EPA provided you with a second conditional approval. Based on our reviews, some of the EPA's comments are still not been properly addressed. Although the QAPP provides additional detail, it does not provide the level of detail required by the *EPA Requirements for Quality Assurance Project Plans*, dated March 2001 (EPA QA/R-5). For example, key elements of QA/R-5 are missing including sample rationale and laboratory standard operating procedures (SOPs). Further, the data validation discussion and checklists are insufficiently detailed. The enclosed attachment describes certain deficiencies noted in your latest submittals. Again, EPA is not opposed to RMC commencing work at the facility as long as the attached EPA comments are addressed within 14 days of receipt of this letter. The revised texts should be submitted within 14 days of receipt of this letter. If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

A handwritten signature in black ink, appearing to read "Jonathan Adenuga", is written over a faint circular stamp.

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

cc: Bradley Martin, Techlaw Inc.,
cc: Ruth Jean, IDEM

ATTACHMENT

Evaluation of Response to General Comment (GC) 1a: The response partially addresses the comment. However, key elements of *EPA Requirements for Quality Assurance Project Plans*, dated March 2001 (EPA QA/R-5) have not been addressed in the QAPP. For example, the Quality Assurance Project Plan (QAPP) does not contain all standard operating procedures (SOPs) that will be used (e.g., for validation, analysis, etc.). Further, some of the information presented in the QAPP is inconsistent with the information presented in the SAP and other sections of the CM Design. The following are examples of deficiencies and inconsistencies noted in the QAPP:

- a. Section 4.2 of the QAPP, entitled Verification and Validation Methods, does not contain all of the qualifiers presented in SAP Section 10.2, Data Validation Protocol. Revise the QAPP and/or SAP to address this discrepancy.
- b. Section 4.2 of the QAPP cites one SOP for data validation, while Section 10.2 of the SAP references two procedures. Revise the QAPP and/or SAP to address this discrepancy.
- c. Section 4.2 of the QAPP indicates that the Treatment System sample delivery groups (SDGs) will undergo a lesser quality assurance (QA) review, but this has not been discussed in the SAP. It is also unclear what SDGs this refers to and why a lesser QA review was selected. Revise the QAPP to address this discrepancy.
- d. Table 2, Data Quality Objectives, in the QAPP lists a relative percent difference (RPD) of 35 percent for matrix spike soil samples, but the method specified limit included in Table 12-1 of Attachment A, the Laboratory Quality Assurance Manual, is 20 percent. Revise the QAPP to address this discrepancy.
- e. The QAPP does not discuss and summarize the secondary data that was used for the project; however, Appendix A, Confirmatory Sampling, indicates that previously collected data was used. Revise the QAPP to summarize previously collected data, including any limitations on this data.
- f. The QAPP does not indicate whether soil samples will be reported on a dry weight basis and if criteria objectives listed in Table 1, Sampling Parameters and Reporting Limits, are dry weight corrected. Revise the QAPP to indicate that both soil results and project criteria objectives will be reported based on dry weight.
- g. The QAPP includes extraneous information regarding analyses and validation of organic methods, but the SAP indicates only inorganic analyses will be performed. For example, Section 2.4 of the QAPP indicates tentatively identified compounds (TICs) may be measured, Section 4.2 of the QAPP discusses QA review of organic data, and data validation checklists are provided for semi-volatile organic compounds (SVOCs) and volatile organic compounds (VOCs). Revise the QAPP to remove extraneous information.

Revise the QAPP to provide all SOPs referenced in the QAPP. Also, ensure the QAPP, SAP and CM Design present consistent information. Additional examples of missing EPA QA/R-5 elements are also included in the following comments.

Evaluation of Response to GC 1b: The response does not address the comment. The data quality objectives (DQOs) discussed in Section 1.4 of the QAPP do not provide sufficient detail when compared to EPA's DQO guidance document, *Guidance on Systematic Planning using the Data Quality Objectives Process* (QA/G-4), dated February 2006 and EPA QA/R-5, Section 3.2.7, A7 - Quality Objectives and Criteria. The DQO section should clearly define the problem and the environmental questions that will be answered for the current investigation, including the previous data that has been collected for the site. Project decision "If..., then..." statements should be included, linking data results with possible actions. The DQOs should also identify the type, quantity, and quality of data needed to answer the study questions. Although some of this information may be located in the CM Design (e.g., the if/then statements for confirmatory sampling and the specific cleanup criteria for backfill included in Appendix A), this information should be added to the QAPP and summarized in a table to make the QAPP a more useful field document. Revise the QAPP to contain detailed DQOs to ensure that the environmental problems are adequately addressed and informed decisions can be made in the field.

Evaluation of Response to GC 1c: The response does not address the comment. The response indicates that certain sections in the SAP contain the rationale for the design of the proposed soil and groundwater sampling. However, the referenced sections do not appear to contain sufficient information and instead reference other pieces of the CM Design. The following are several examples where additional information is necessary:

- a. The response indicates that Section 5.3 of the SAP contains the rationale for the stockpile sampling, but this section references the CM Design for the rationale and design. It is unclear where in the CM Design this information may be found (i.e., why collecting one composite sample of four aliquots per 250 cubic yards will sufficiently determine that metals concentrations are below cleanup criteria). Revise the QAPP to justify why this amount of sampling is sufficient to meet project goals.
- b. The response states that the rationale for the containment cell groundwater sampling is provided in Section 5.6 of the SAP, but this section references Section 5.5.1 of the CM Design Report and Sections 2.6 and 4.2 of the Operations and Maintenance Plan. However, neither of these sections indicates why the proposed number and location of wells is sufficient to detect a release from the containment cell. Additionally, it is unclear why quarterly sampling for two years followed by semi-annual sampling for two years and then annual sampling was selected for the monitoring frequency. Revise the QAPP to justify why the proposed sampling is sufficient to meet project goals.
- c. The design and rationale for the confirmatory sampling references Chapter 6 of the IDEM RISC Technical Guide (RISC Guide); however, additional detail is necessary to justify the sampling approach. Section 6.3 of the RISC Guide explains that random soil sampling for closure should consider the coefficient of variation (CV), and notes that additional samples or additional actions may be required if the CV is greater than 1.2. Additionally, Section 6.3.1 of the RISC Guide indicates that the upper confidence level (UCL) of the average concentration is used to determine closure. It is unclear if this statistical approach will be used for determining if additional excavation is

required or if closure is complete. Revise the QAPP to explain the rationale for the confirmatory sampling approach in greater detail.

Evaluation of Response to GC 1d: The response and information presented in Attachment B of the QAPP does not address the comment. The data validation checklists provided as Attachment B of the QAPP do not include the acceptance limits that will be used to validate data or how/when the associated qualifiers will be used when exceedances of control limits occur. Revise the QAPP to either indicate that the EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review will be used as written (i.e., not modified for SW-846 method) or provide a checklist that includes details on how samples will be qualified (e.g., the control limits and associated qualifiers for exceedances that will be used during data validation).

Evaluation of Response to GC 1e: The response appears adequate; however this information should be added to Section 1.6, Documents and Records, of the QAPP. Additionally, Section 1.6 should include the monthly reports discussed in QAPP Section 3.2, Reports to Management. Revise Section 1.6 of the QAPP to include the information discussed in this response and the monthly reports discussed in Section 3.2.

Evaluation of Response to Specific Comment (SC) 3: The response partially addresses the comment. The response indicates that the long, narrow excavations ND1 and ND2 will be sampled along the centerline of the removed soil. However, it is unclear what will be done to minimize clustering of sampling locations for these narrow excavations. For example, the three sample locations for ND1 could be preferentially located at one end of the excavation. To ensure sample locations are sufficient, the proposed sample locations on the grids should be depicted. Revise the SAP to include the proposed locations of the confirmatory samples.

Evaluation of Response to SC 14: The response addresses the comment; however, the addition of dissolved oxygen (DO) and oxygen reduction potential (ORP) to well stabilization parameters in Section 2.2.4.3 of the QAPP should also be made to Section 6.6.3 of the SAP. Revise this section of the SAP to include the well stabilization parameters provided in the QAPP.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

5/3/2011

REPLY TO THE ATTENTION OF:

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
3000 Montrose Avenue
Reading, PA 19605

Pre-Final Corrective Measures Design Work Plan
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the Response to Comments, dated March 21, 2011, for the Final Corrective Measure Design (Final CM Design) for the Refined Metals Corporation (RMC) facility located in Beech Grove, Indiana.

On January 4, 2011, EPA provided you with a conditional approval with the hope that RMC would be able to address all of EPA's comments. Based on our review, some of the EPA's comments have not been properly addressed. However, our desire is to see that the implementation of the proposed work in the CMI work plan begin as soon as possible. In that spirit we will provide you with another conditional approval. The enclosed attachment describes certain deficiencies noted in your March 2011 response. EPA is not opposed to RMC commencing work at the facility as long as the attached EPA comments are addressed within 14 days of receipt of this letter. The revised texts should be submitted within 14 days of receipt of this letter. If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

A handwritten signature in black ink, appearing to read "Jonathan Adenuga", is written over a faint circular stamp.

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

cc: Bradley Martin, Techlaw Inc.,
cc: Ruth Jean, IDEM

SAMPLING AND ANALYSIS PLAN AND MONITORED NATURAL ATTENUATION WORK PLAN

Evaluation of Response to General Comment (GC) 1a: The response does not address the comment. The response indicates that Appendix D, Sampling and Analysis Plan, of Attachment D, Construction Quality Assurance Plan (hereinafter referred to as SAP) provides the quality assurance project plan (QAPP) components. However, the SAP does not present all information required to be presented in a QAPP. Further, please note that the previous comments provided only examples of deficiencies when comparing the SAP to *EPA Requirements for Quality Assurance Project Plans*, dated March 2001 (EPA QA/R-5), and were not intended to be an all inclusive comparison. A QAPP, which presents all of the information contained in the *EPA Requirements for Quality Assurance Project Plans*, dated March 2001 (EPA QA/R-5) should be prepared and submitted for review. Where applicable, the QAPP may reference the SAP for required information.

Additionally, the response indicates that Attachment A of the SAP contains laboratory standard operating procedures, method detection limits, and quality control acceptance criteria; however, Attachment A of the SAP has not been provided. Revise the SAP to provide Attachment A.

Evaluation of Response to GC 1b: The response does not address the comment. The response indicates that data quality objectives (DQOs) were provided in Table 2 of the SAP; however, the DQOs listed in Table 2 do not provide the level of information necessary in a QAPP. Revise the SAP to present detailed DQOs, consistent with EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA QA/G-4).

Evaluation of Response to GC 1c: The response partially addresses the comment. The referenced sections provide the sampling design. However, the rationale for why the sampling design is sufficient to meet study goals is not provided. Revise the SAP to provide a rationale for all sampling which discusses why the proposed sample numbers, types, locations and analyses are sufficient to meet study goals.

Evaluation of Response to GC 1d: The response partially addresses the comment. The response indicates that Attachment B of the SAP contains a typical data validation checklist; however, Attachment B of the SAP has not been provided. Revise the SAP to provide data validation checklists for all proposed analyses.

Evaluation of Response to GC 1e: The response partially addresses the comment. Although it is noted that the information included in data validation reports (DVRs) has been provided, it is unclear what will be included in the project reports (e.g., field logs, laboratory data packages, DVRs, etc.). Further, the data reduction discussion does not indicate how analytical data will be incorporated into the final report. Revise the SAP to indicate what will be included in the project reports, and to provide a data reduction discussion which indicates how the analytical data will be incorporated into the final report.

Evaluation of Response to SC 3 & Comment 7: The response to this comment is partially adequate; however, Sheet 8 does not appear to list the amount of confirmatory samples to be collected after excavation. Additionally, it is unclear how the 10-foot by 10-foot grid will be applied to oddly shaped areas (i.e., ND1 and ND2) and excavation areas greater than the grid area. Revise Sheet 8 to include the number of samples, and clarify how the grid sampling approach will be applied to each excavation area.

Evaluation of Response to SC 5 and 9: The response partially addresses the comment. The response indicates that Attachment C of the SAP contains manufacturer instructions for a Niton XRF unit; however, Attachment C of the SAP has not been provided. Revise the SAP to provide Attachment C.

Evaluation of Response to SC 11: The response partially addresses the comment. The text and tables indicate that zip lock baggies will be used for soil samples. However, Section 7.3 of the SAP indicates that samples will be placed on ice. Zip lock baggies may not be sufficient since the baggies may end up sitting in water from melted ice. The baggies can allow water infiltration over time which could result in cross contamination. Revise the SAP to ensure the potential for cross contamination is eliminated.

Evaluation of Response to SC 12: The response partially addresses the comment. Minimum sample volumes have been added to Table 3. However, the minimum sample size for many most soils is between 5-10 grams. To ensure that the laboratory has sufficient material to both properly subsample the soils, and re-prepare the soils if QC problems are encountered, it is recommended that at least 50 grams be collected. Revise the SAP to ensure that 50 grams will be collected for all analyses.

Evaluation of Response to SC 14: The response addresses the comment; however, further clarification is necessary.

- Section 6.6.2 of the SAP indicates that calibration of field instruments for groundwater monitoring activities will be conducted in accordance with the manufacturer instructions, but these instructions have not been provided. Revise the SAP to provide the manufacturer instructions for all field instruments.
- Section 6.6.3 of the SAP indicates that well stabilization will be reached after conductivity, temperature, pH, and turbidity have reached certain criteria, but dissolved oxygen (DO) and oxygen reduction potential (ORP) have not been discussed. Revise the SAP to indicate the stabilization criteria that will be used for DO and ORP.

March 10, 2011

2003-1046-00

Mr. Jonathan Adenuga
Corrective Action Branch
Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Response to EPA's Comments for CMS Report
Refined Metals Facility
Beech Grove, Indiana
IND 000 718 130

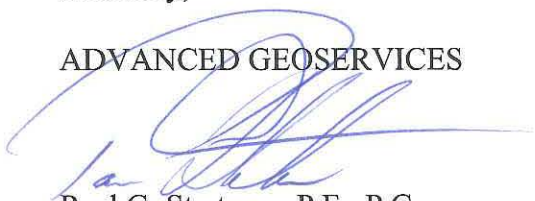
Dear Jonathan:

I am sending this letter to document our telephone conversation of earlier today regarding submission of the response to comments contained in your comment letter received on February 8, 2011. Pursuant to that conversation, Refined Metals Corporation is granted an 11 day extension for submission of the required response from March 10, 2011 to March 21, 2011.

If you have any questions, please contact Paul Stratman at 610-840-9122 or Matthew Love at 610-921-4054.

Sincerely,

ADVANCED GEOSERVICES



Paul G. Stratman, P.E., P.G.
Senior Project Consultant

PGS:vm

cc: Ruth Jean
Matthew Love

May 25, 2010

2003-1046-18

Mr. Jonathan Adenuga
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Response to Comments, Corrective Measures Design
Refined Metals Corporation, Beech Grove, Indiana
IND 000 718 130

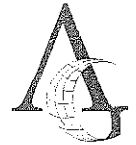
Dear Mr. Adenuga:

Advanced GeoServices, on behalf of Refined Metals Corporation (RMC), submits three (3) copies of the enclosed responses to comments on the Final Corrective Measures Design dated October 6, 2010, and revised on March 21, 2011 for the RMC Facility in Beech Grove, Indiana. The USEPA issued a comment letter dated May 3, 2011. This response has been prepared and is being issued in response to those comments.

For your convenience, your comment is provided in bold followed by our response.

Comment: Evaluation of Response to General Comment (GC) 1a: The response does not address the comment. The response indicates that Appendix D, Sampling and Analysis Plan, of Attachment D, Construction Quality Assurance Plan (hereinafter referred to as SAP) provides the quality assurance project plan (QAPP) components. However, the SAP does not present all information required to be presented in a QAPP. Further, please note that the previous comments provided only examples of deficiencies when comparing to the SAP to EPA Requirements for Quality Assurance Project Plans, dated March 2001 (EPA QA/R-5), and were not intended to be an all inclusive comparison. A QAPP, which presents all of the information contained in the EPA Requirements for Quality Assurance Project Plans, dated March 2001 (EPA QA/R-5) should be prepared and submitted for review. Where applicable, the QAPP may reference the SAP for required information.

Additionally, the response indicates that Attachment A of the SAP contains laboratory standard operating procedures, method detection limits, and quality control acceptance criteria; however, Attachment A of the SAP has not been provided. Revise the SAP to provide Attachment A.



Mr. Jonathan Adenuga
2003-1046-18
June 2, 2011
Page 2 of 5

Response: A new QAPP has been prepared and the laboratory Quality Assurance Manual has been provided as Attachment A of the QAPP.

Comment: **Evaluation of Response to GC 1b:** The response does not address the comment. The response indicates that data quality objectives (DQOs) were provided in Table 2 of the SAP; however, the DQOs listed in Table 2 do not provide the level of information necessary in a QAPP. Revise the SAP to present detailed DQOs, consistent with EPA's *Guidance on Systematic Planning Using the Data Quality Objective Process* (EPA QA/G-4).

Response: DQOs are presented in Section 1.4 of the QAPP.

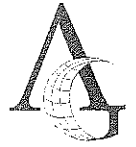
Comment: **Evaluation of Response to GC 1c:** The response partially addresses the comment. The referenced sections provide the sampling design. However, the rationale for why the sampling design is sufficient to meet study goals is not provided. Revise the SAP to provide a rationale for all sampling which discusses why the proposed sample numbers, types, locations and analyses are sufficient to meet study goals.

Response: Section 5.1 of the SAP has been revised to provide the Rationale for confirmatory sampling. Appendix A "Confirmatory Sampling" of the CQAP already discusses the basis for limiting sample analysis to only lead outside the HWMUs and including antimony, arsenic, cadmium and selenium, in addition to lead, within the HWMUs. Rationale for stockpile sampling have been added to Section 5.3 of the SAP. Rationale regarding groundwater sampling for the Containment cell groundwater wells has been added to Section 5.6 of the SAP. Rationale regarding the location of groundwater samples to be collected for MNA groundwater monitoring has been added to Section 5.7 of the SAP. Additional rationale regarding the sufficiency of MNA groundwater monitoring to meet study goals is provided in the MNA work plan which is referenced in Section 5.7 of the SAP.

Comment: **Evaluation of Response to GC 1d:** The response partially addresses the comment. The response indicates that Attachment B of the SAP contains a typical data validation checklist; however, Attachment B of the SAP has not been provided. Revise the SAP to provide data validation checklists for all proposed analyses.

Response: Data validation checklists has been provided as Attachment B in the QAPP.

Comment: **Evaluation of Response to GC 1e:** The response partially addresses the comment. Although it is noted that the information included in data validation reports (DVRs) has been provided, it is unclear what will be



Mr. Jonathan Adenuga
2003-1046-18
June 2, 2011
Page 3 of 5

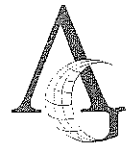
included in the project reports (e.g., field logs, laboratory data packages, DVRs, etc.). Further, the data reduction discussion does not indicate how analytical data will be incorporated into the final report. Revise the SAP to indicate what will be included in the project reports, and to provide a data reduction discussion which indicates how the analytical data will be incorporated into the final report.

Response: Two types of project reports will be generated from the sampling activities covered by the SAP and QAPP. As previously described in Section 6.0 of the CQAP, confirmatory sampling performed as part of the remediation will be presented in the Final Certification Report and will include figures presenting the sample locations and tables presenting the corresponding results. The accompanying narrative will discuss where sample results required additional remediation and describe vertical and horizontal limits of the additional removal activities. The Final Certification Report will include electronic copies of the Data Validation Reports, XRF correlation information, and laboratory reports. Copies of the field logs will not be included in the Final Certification Report, but they are maintained as part of the project file if they are required for future reference.

As described in Section 6.0 of the MNA Work Plan, the Annual Groundwater report will include quarterly groundwater contour maps, additive results tables, groundwater purge sheets and statistical analysis. Electronic copies of the Data Validation Reports and laboratory reports will also be provided. Copies of the field logs will not be included in the Final Certification Report, but they are maintained as part of the project file if they are required for future reference.

Comment: **Evaluation of Response to SC 3 & Comment 7: The response to this comment is partially adequate; however, Sheet 8 does not appear to list the amount of confirmatory samples to be collected after excavation. Additionally, it is unclear how the 10-foot by 10-foot grid will be applied to oddly shaped areas (i.e., ND1 and ND2) and excavation areas greater than the grid area. Revise Sheet 8 to include the number of samples, and clarify how the grid sampling approach will be applied to each excavation area.**

Response: The Table of Sheet No. 8 of the design has been revised to show number of samples required within each excavation area. The grid is applied as an overlay that beginning $\frac{1}{2}$ the grid width (in this project 5 feet) from reference sidewalls selected by the Technician at the time of sampling. Typically the reference sidewalls will be perpendicular sidewalls that are readily defined based on excavation configuration and physical features. For the oddly shaped excavations the Technician will attempt to get the maximum number of grid nodes in the



Mr. Jonathan Adenuga
2003-1046-18
June 2, 2011
Page 4 of 5

bottom of the excavation. For an excavation such as ND1 or ND2 the Technician will treat the grid as being a single baseline along the centerline of the excavation. The above language has been added to Section 5.1 of the SAP.

Comment: **Evaluation of Response to SC5 and 9: The response partially addresses the comment. The response indicates that Attachment C of the SAP contains manufacturer instructions for a Niton XRF unit; however, Attachment C of the SAP has not been provided. Revise the SAP to provide Attachment C.**

Response: The Niton manufacturer's instructions have been included in the QAPP.

Comment: **Evaluation of Response to SC11: The response partially addresses the comment. The text and tables indicate that zip lock baggies will be used for soil samples. However, Section 7.3 of the SAP indicates that samples will be placed on ice. Zip lock baggies may not be sufficient since the baggies may end up sitting in water from melted ice. The baggies can allow water infiltration over time which could result in cross contamination. Revise the SAP to ensure the potential for cross contamination will be eliminated.**

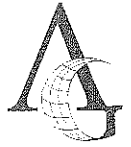
Response: Section 7.3 of the SAP has been revised to clarify that ice is only required when shipping groundwater samples. In addition Section 7.3 has been revised to state that if soil samples in baggies are shipped with samples requiring ice, then the soil samples in baggies shall be double bagged to prevent infiltration of ice water into the soil sample.

Comment: **Evaluation of Response to SC12: The response partially addresses the comment. Minimum sample volumes have been added to Table 3. However, the minimum sample size for many most soils is between 5-10 grams. To ensure that the laboratory has sufficient material to both properly subsample the soils, and re-prepare the soils if QC problems are encountered, it is recommended that at least 50 grams be collected. Revise the SAP to ensure that 50 grams will be collected for all analyses.**

Response: Language specifying a minimum mass of 50 grams has been added to Section 6.1, 6.2 and 6.3 of the SAP.

Comment: **Evaluation of Response to SC14: The response addresses the comment; however, further clarification is necessary.**

- **Section 6.6.2 of the SAP indicates that calibration of field instruments for groundwater monitoring activities will be conducted in accordance with manufacturer instructions, but these instructions have not been**



Mr. Jonathan Adenuga
2003-1046-18
June 2, 2011
Page 5 of 5

provided. Revise the SAP to provide the manufacturer instructions for all field instruments.

- Section 6.6.3 of the SAP indicates that well stabilization will be reached after conductivity, temperature, pH, and turbidity have reached certain criteria, but dissolved oxygen (DO) and oxygen reduction potential (ORP) have not been discussed. Revise the SAP to indicate the stabilization criteria that will be used for DO and ORP.

Response: The manufacturer's instructions for the LaMotte turbidimeter and YSI flow through cell have been included in the QAPP. DO and ORP have been included as part of the well stabilization criteria in the QAPP. These are the manufacturers we currently utilize, however; the reviewer must recognize that actual equipment utilized is subject to change. When/if equipment changes are anticipated, the EPA will be notified of such proposed changes and information for the new equipment submitted.

We believe this adequately responds to the comments contained in your May 3, 2011 letter. If you have any questions, please call me at 610-840-9122.

Sincerely,

ADVANCED GEOSERVICES CORP.

Paul G. Stratman, P.E., P.G.
Senior Project Consultant



PGS:vm

Enclosures

cc: Matthew Love
Ruth Jean



RE: Refined Metals Beech grove (UNCLASSIFIED)

Lindley, Laban C LRL to: Paul Stratman, Jonathan Adenuga

08/30/2012 11:53 AM

Cc: "JEAN, RUTH (RJEAN@idem.IN.gov)", "matt.love@exide.com",
"SGroce@idem.IN.gov"

History:

This message has been forwarded.

1 attachment



document2012-08-30-070117.pdf

Classification: UNCLASSIFIED

Caveats: NONE

Paul -

Thank you for the information. It looks like you all are striving hard to avoid and minimize impacts to the wetlands on-site.

I just have one comment about the proposed mitigation. The drawing you attached shows doing wetland mitigation in the same area of the existing wetland ditch along the rail spur. Since this is already considered a jurisdictional wetland area, you cannot do mitigation there. I was thinking we discussed trying to design the mitigation between the ditch wetland and the other existing wetlands on-site, where it is currently upland. This would essentially make the large wetland system on-site contiguous with the wetland ditch. I hand sketched what I'm talking about on your drawing in red, and attached. Depending on how much mitigation is needed, hopefully there is plenty of room in that area. Let me know if you have any questions.

Thanks,

Laban C. Lindley
Team Leader
U.S. Army Corps of Engineers
Louisville District
Indianapolis Regulatory Office
8902 Otis Avenue, Suite S106B
Indianapolis, IN 46216
Phone: 317-691-2666

-----Original Message-----

From: Paul Stratman [mailto:pstratman@advancedgeoservices.com]

Sent: Monday, August 27, 2012 2:13 PM

To: Adenuga.Jonathan@epamail.epa.gov

Cc: JEAN, RUTH (RJEAN@idem.IN.gov); matt.love@exide.com; Lindley, Laban C LRL;
SGroce@idem.IN.gov

Subject: Refined Metals Beech grove

Jonathan,

Pursuant to the discussions between you, Matt Love and I, attached please find

a drawing showing the conceptual changes for the Refined Metals Site in Beech Grove, Indiana. As you are aware, the changes are necessary to satisfy the Army Corps of Engineers (ACOE) requirement that we minimize disturbance of existing wetlands as a condition of necessary Section 404 Permits. We believe that the conceptual changes as presented on the attached drawing successfully address the ACOE requirements to minimize disturbance while minimizing changes to the primary components of the approved Corrective Measures Design. A description of the anticipated changes is provided below:

1. The original Containment Cell had a rectangular shape and an area of 62,700 sf (330 ft. x 190 ft.) as measured at the centerline of the proposed berm. The modified Design shows the cell rotated 90 degrees from the approved design with the northeast corner truncated and an approximate area of 58,500 sf. (a reduction of approximately 6-7%). The proposed bottom elevation and maximum grading elevations will remain at 841.5 and 860.5 respectively, with maximum 3:1 side slopes. The containment cell capacity is expected to be reduced from the current 25,600 +/- cy to approximately 22,500 +/- cy.

2. The storm water management (SWM) basin was originally proposed to be immediately east of the containment cell. The revised location will be north of the proposed containment cell. The precise configuration will not be defined until we perform storm water management calculations, but the general concept is that the SWM basin will receive runoff from the west half of the site and discharge to the drainage ditch located along the south side of the CSX tracks. Runoff from the remainder of the site is expected to flow around the east side of the cell to the existing and mitigated wetland areas. Small runoff events will sustain the existing and proposed wetlands. Larger runoff events will inundate the wetlands and discharge through the SWM basin outlet structure. If storm water calculations require additional capacity, a second SWM basin may be constructed immediately east of the rail spur.

3. Forebays will be established upslope from the proposed SWM basins to capture sediment.

4. Maximum water surface elevations for the 10 year design storm event in the SWM basin(s) will be designed to be less than elevation 841.5. Grading adjacent to the existing and mitigated wetland areas will be set to prevent detention of water higher than elevation 841.

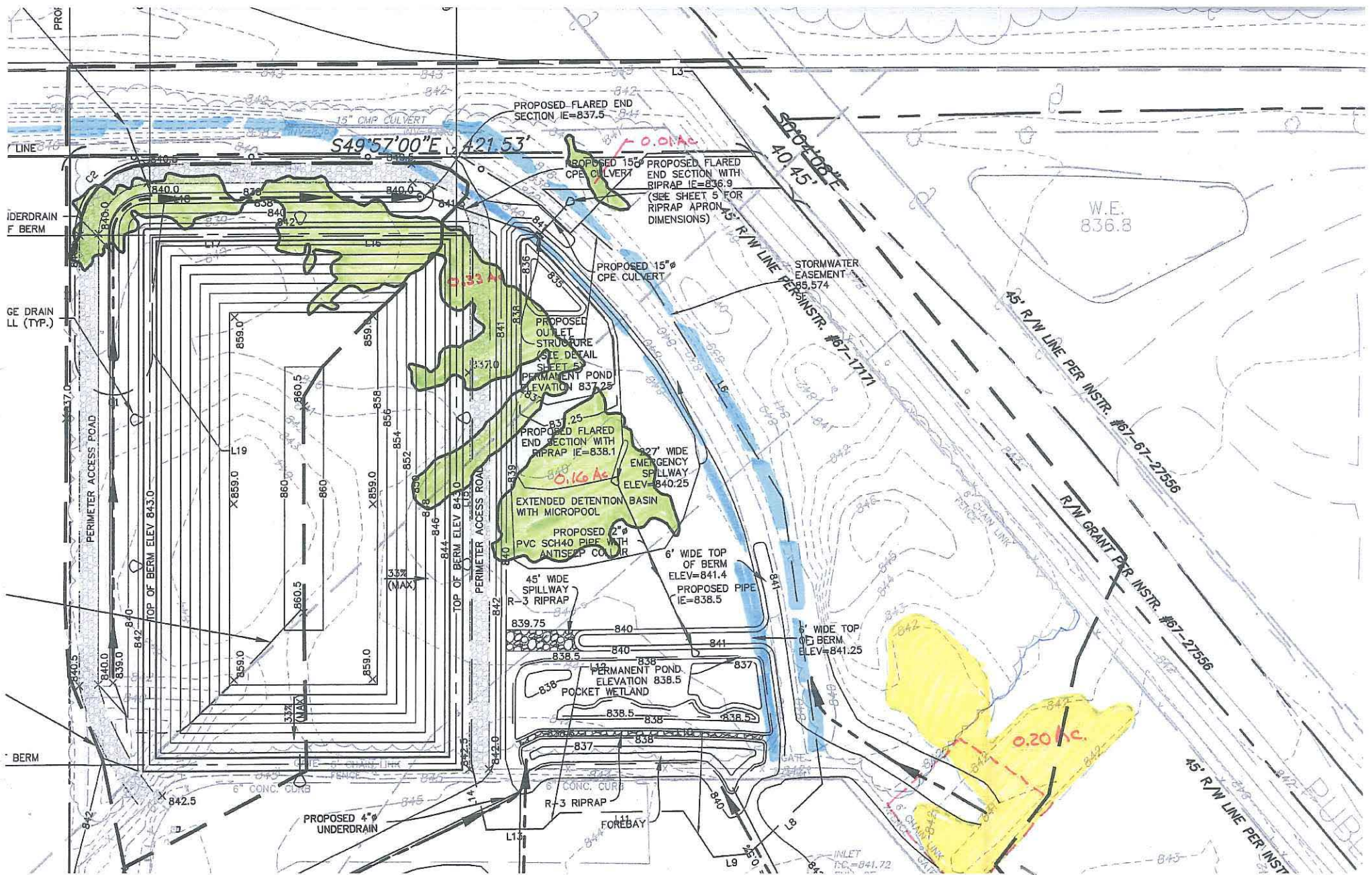
5. Restoration grading as proposed in the approved design in areas south of the containment cell may be revised to enhance surface water runoff conditions to match the new SWM basin location(s).

6. Also at the request of the Army Corps and IDEM, swales proposed for sediment remediation along the railroad spur will be restored utilizing "soft" materials (soil and vegetation) instead of the geotextile and rip-rap proposed in the current design. Remediated portions of the swale along the CSX line will be restored using soil and periodic stone check dams.

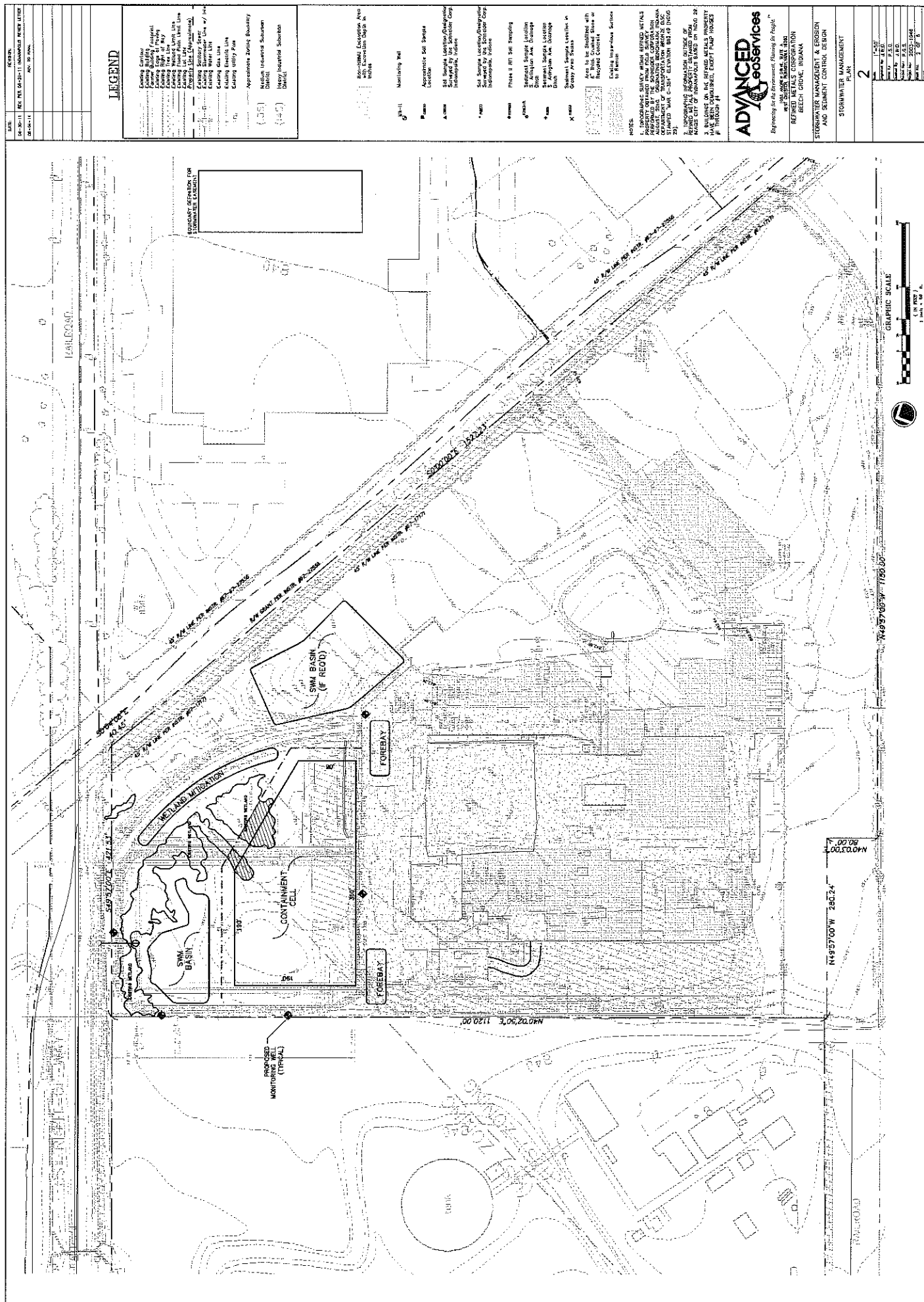
Matt Love and I would like to meet with you and your contractor in Chicago to review the proposed changes and discuss consistency with the previously approved Corrective Measures Plan and the best path forward. Please let Matt and I know your schedule over the next few weeks.

Thank you.

Paul



[illegible]



SOIL

Sampling Point: WD-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/2	100					SCL	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: WD-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10 YR 3/2	100					SCL	
								22 y low
								Q.L.V. L.T.L
								CTL @ 2.5

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histisol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☒ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☒ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
☒ Dark Surface (S7) (LRR K, L)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Very Shallow Dark Surface (TF12)
☐ Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

 Type: _____
 Depth (inches): _____
Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ☐ No ☐ Depth (inches): _____
 Water table present? Yes ☐ No ☐ Depth (inches): _____
 Saturation present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Midwest Region

